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CONGENITAL PYLORIC STENOSIS.*

BY W. E. LADD, M.D., F.A.C.S., BOSTON.

THE literature on pyloric stenosis was very scarce until about 1900, since which time it has been becoming steadily more voluminous, and during the last five years has increased most rapidly, which may be taken as an indication of not only increased knowledge of the condition but also of greater success in its alleviation.

During the last three years at the Children's Hospital, we have substituted the operation of pylorotomy for the more formidable and complex operation of gastro-enterostomy previously used for the relief of this condition. This has caused a marked improvement in the results and a more clearly defined knowledge of cases suitable for operation.

It is for the purpose of explaining our present beliefs and stating our results that this paper is written. The finding by Dent and others of a pyloric tumor in the fetus gives pretty conclusive proof of the condition being one of congenital origin, though the fact that the symptoms do not usually manifest themselves before two weeks, has thrown some doubt on this question. The slight amount of elasticity of the scirrhus-like tumor found at operation, and a small amount of swelling of the mucous membrane necessary to plug the rigid opening from the stomach, seem to me to explain adequately the late appearance of the symptoms and to interfere in no way with the belief that the cause of stenosis is congenital in origin.

In our cases the symptoms have commenced in the majority of cases between the second and third weeks, a few later, but none earlier than the tenth day. The typical clinical picture is of a breast-fed baby who has done well for the first two or three weeks and then, without apparent reason, commences vomiting. The vomiting is expulsive and forcible in character and occurs frequently immediately after or even during nursing. Following the onset of vomiting, loss of weight, infrequent and small stools are noticed. In the severe cases the loss of weight may be quite rapid (I operated on a baby recently who lost five ounces in a day, and twelve ounces in the six days before the operation). On examination, one finds an ill-nourished baby with prominent epigastrium, where peristaltic waves can be seen, and under the edge of the liver in many cases may be felt a tumor the size of an olive. Such is the typical picture of a case of pyloric stenosis, and on such a picture one would probably be justified in making a

* Read at meeting of New England Pediatric Society, March 8, 1918.

diagnosis. But one does not always find all the features of this picture clearly defined, so it is worth while considering how little one is justified in making the diagnosis on, and especially how little one is justified in considering cause for operation.

Let us consider the question of tumor first. There are some men who consider that they can feel the tumor in almost every case, and who consider it pathognomonic when they do. On account of the deep and high situation of the pylorus under the edge of the liver, I believe that there are many cases in which it is impossible for anyone to feel the tumor. Furthermore, even when one does, it does not mean that one is necessarily dealing with a true case of stenosis. A few weeks ago I operated on a case in which the tumor was easily palpable, and at operation a tumor at the pylorus was found, but it was not of the hard, unresisting character of the true stenosis, and, on cutting the muscle, it was found to be comparatively thin and bled easily. The tumor was largely composed of redundant mucous membrane. Any operation so far devised is not beneficial in such cases, in our experience.

Visible peristalsis, when running from left to right across the epigastrium, in large waves, I believe to be very suggestive and important in making the diagnosis. But of all the features of the picture, the story, when attainable, is so characteristic that it seems to me of the greatest importance. There are some cases which, even after all the evidence available is at hand, will still leave one in doubt as to the diagnosis, or at least as to the advisability of operation. For such cases I believe the bismuth meal and x-ray to be a great aid, and have never seen any bad results from its use. From a surgical point of view, an essential fact to ascertain is whether there is obstruction or not, and the x-ray is certainly a great aid in establishing this point. Holt advises against the use of the x-ray, and bases his objection partly on one case in which a series of observations was made over a period of twenty-four hours, at the end of which time the surgeon was called, but the baby was dead before he arrived. Holt's objection, I believe, should be directed against the method of using the x-ray rather than against its use entirely. One plate may be taken immediately after the ingestion of the meal, to show the size and shape of the stomach, and one or two more, two, three, or four hours later. Such procedure has given us very useful data, and seems to me more accurate and less trying on the baby than attempting to ascertain gastric retention by means of a suction tube, as recommended by Holt.

Now, having made the diagnosis, what is to be the treatment? In the severe cases where vomiting is persistent and little or no food passes from the stomach, there can be but one outcome of any treatment other than surgical. That is rapid wasting and death, which may be expected in the course of about a month or even less time after the onset of symptoms. In what Holt classifies as the milder cases, which I am not sure should be classified as stenosis at all, recovery may be expected with medical treatment and careful feeding under the direction of a good pediatrician. The question of classification may be a quibble on terms, but the appearance of the tumor found at operation is so definite that I am tempted to quibble a bit. In the severe types, the pylorus is hard, inelastic and, when cut, hardly bleeds at all, the cut surface being white and appearing almost like cartilage. On spreading the incision, the mucous membrane frees readily from the muscular layer and pouts up into the wound, giving the stomach a good outlet. In this type of case the results from the muscle-splitting operation are most gratifying. In the milder type, so called, which I had classified in my own mind as pylorospasm, one finds a tumor sometimes as large as in the true stenosis, but soft, elastic, and bleeding freely when cut, and the muscular and mucous layers not separating easily. My experience with this type, though limited, leads me to believe that they should not be operated on at all, and certainly not by the muscle-splitting operation.

The indications for operation, then, are: the typical story, the physical findings, loss of weight and failure to improve under medical treatment. The medical treatment should not be persisted in until the baby becomes a poor surgical risk. In doubtful cases the x-ray will often settle the question.

When operation has been decided upon, what operation shall be performed? Up to five years ago gastro-enterostomy was the operation selected by most surgeons, though divulsion of the pylorus and various plastic operations had their advocates. During the last three or four years the simpler operation of making a longitudinal incision through the muscular coats of the pylorus and spreading the incision so as to allow

the mucous membrane to bulge into the wound has been used quite extensively. In performing this operation, which we have called pylorotomy, certain precautions must be taken. The muscle fibers must be thoroughly separated from the stomach to the duodenum, otherwise a constriction will be left. The cut must be widely separated and the mucous membrane allowed to come up to the level of the serous surface to avoid the muscle falling together again. At the duodenal end of the incision care must be taken to avoid perforating the mucous membrane, which is thin at this point. Bearing these points in mind, the operation can be performed in ten minutes or less and with very little handling of the viscera and slight shock.

Now what are the results of the three kinds of treatment,—medical, gastro-enterostomy and pylorotomy? Holt gives some statistics on this subject, arranged chronologically, which are instructive and which I shall quote:

RESULTS OF MEDICAL TREATMENT AND THE OLDER AND MORE RECENT SURGICAL TREATMENT.*

	Cases No.	Recovered No.	Died No.	Mortality Per Cent.	Av. Age Wks.	Av. Wt. Lss.
First Period, 1901-1911:						
Without operation	24	10	14	58	..	..
Operation (Gastro-enterostomy)	17	7	10	58	..	..
Total	41	17	24	58	7.3	7.6
Second Period, 1912-1914:						
Without operation	7	3	4	57	..	..
Operation (Gastro-enterostomy, 24; Rammstedt, 6)	30	17	13	43	..	..
Total	37	20	17	45.9	6.6	7.7
Third Period, 1915-1916:						
Without operation	2	1	1	50	..	..
Operation (Rammstedt)	61	47	14	23	..	..
Total	63	48	15	23.8	7.0	6.8

* In the first period, operation was performed generally after medical treatment; in the second period, usually soon after admission, and in the third period, always soon after admission. The average duration of symptoms on admission in each group was 4.2 weeks.

From this table one notices that the mortality for medical treatment remains over 50%, while the mortality from surgical treatment has progressively diminished.

RAMMSTEDT'S OPERATION AT BABIES' HOSPITAL.*

	Cases, No.	Deaths, No.	Mortality, Per Cent.
Prior to 1915	6	2	33
1915	35	10	28.5
1916	26	4	15.3
	67	16	24

For the year 1916 he reports 26 pylorotomies with four deaths, a mortality of 15.3%. The mortality from gastro-enterostomy in the series of Holt and Downes is perhaps a little high. One finds in the literature reports of small series of cases, notably those of Richter, Stillman, and others, with considerably lower mortality following gastro-enterostomy. And there will unquestionably be from time to time men who happen to have cases in unusually good condition who can report good results from this operation. However, there is no question in my mind but that the simpler operation is the operation of choice for most surgeons. It entails much less shock, restores normal conditions instead of a substitute, and allows feeding to be begun much sooner, which I believe to be highly important, especially in the dried-up, emaciated patients.

In January, 1915, at the Children's Hospital, I performed the first pylorotomy we had done there. The result was very satisfactory and led us to adopt this operation in preference to all others. Since that time, there have been 23 operations done there by the various members of the staff, to which I have added three cases from my outside work, making a total of 26. Of these, 22 have recovered and four died, a mortality of 15.3%. Of the four fatal cases two were very bad risks and died within 36 hours from the time of operation. One other patient did very well for five days, took the feedings well, had no vomiting, bowels moved freely, and in every way seemed to be on the road to recovery, when he began to have slow and shallow respiration, feeble pulse, and at the end of a few hours was dead. What the cause of death was in this case I have no idea as we had no post-mortem. The fourth case was one which I think would have probably done better without operation. The baby was three months old and had had a variety of feeding, and though it had very forcible and frequent vomiting, I do not

* Three patients died from gastro-intestinal conditions subsequently (4 weeks, 6 weeks, 7 weeks); one patient died from empyema (3 months) and one from pneumonia (4 months); forty-six have been followed and are well to date.

think was a true case of stenosis. The baby was in poor condition at time of operation, went on vomiting just the same after the operation as it had before, and died after a few days. I think probably had this baby been x-rayed, no operation would have been performed.

To sum up, then, the results of our experience: Since adopting the muscle-splitting operation, we have a more definite picture of the characteristics of the pyloric tumor, which we believe to be congenital in origin.

When the obstruction is nearly complete, we recommend operation without delay, and believe that two of our four deaths might have been so avoided.

In doubtful cases we consider the x-ray valuable in deciding the advisability of operation, and have seen no bad results from its use. Our mortality is much lower following the operation of pylorotomy than after gastro-enterostomy. For that and other reasons we consider pylorotomy the operation of choice.

By operating with less delay on the cases that should be operated on, and not operating at all on the cases that should not be operated on, we hope in the future that our results will be even more gratifying than they have been during the last three years.

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A CLINICAL STUDY OF 150 CASES OF BRONCHIAL ASTHMA.*

BY FRANCIS M. RACKEMANN, M.D., BOSTON,

Alumni Assistant in Medicine, Harvard Medical School; Assistant in Medicine, Massachusetts General Hospital.

ONE hundred and fifty cases of asthma have been studied in the Out-Patient Department and wards of the Massachusetts General Hospital and in private practice.

The recent theories as to the relation of asthma to anaphylaxis, as well as the considerable experimental and clinical study which has been made in all parts of the country on this relation, have been held constantly in mind, and the present work has been approached from this point of view.

* Abstract of paper read before the Norfolk South District Medical Society.

The object of study was threefold:

1. To discover the cause of asthma or to identify the offending foreign protein in each patient.

2. To separate the patients having the same cause of asthma into groups and,

3. To see whether there was one or more symptom or sign present in each patient and not present in normal non-asthmatic individuals which might indicate a fundamental disturbance of anatomy or physiology in these patients as a group.

Each patient was studied by taking a very careful history, by making a complete physical examination, including chest x-rays, special examination of the nose and throat by experts, electrocardiogram, and blood smears when necessary.

In addition, "skin tests" were made in a large proportion of the patients. Water-clear, sterile solutions of various protein substances were diluted so that each contained the same quantity of total nitrogen per cubic centimeter. These solutions were then injected intradermally. In normal non-asthmatic inidviduals and in certain asthmatics, there was no result showing that the solutions were not irritating. Certain asthmatics gave positive tests. These consisted of a typical urticarial wheal surrounded by a zone of bright erythema, which appeared within ten minutes and was evident for perhaps forty-five minutes or even longer.

Different proteins were used according to the indication in the individuals tested. The solutions available included the sera of all domestic animals—the dander of the horse, cat and dog, the pollen of ragweed, orchard grass, goldenrod, clover and red top hay, egg albumin, a protein from fish muscle, and wheat gliadin.

From the history and skin tests, it has been possible to group 80% of the patients. Two major divisions were recognized, according as to whether the foreign protein apparently responsible came from outside the body (extrinsic), or whether the foreign protein was theoretically absorbed from some focus within the body (intrinsic).

Twenty-eight per cent. of the cases had extrinsic asthma, while almost twice the number, or 53%, had intrinsic asthma.

Each of these divisions can be divided into subgroups as follows:

EXTRINSIC ASTHMA.

Pollen Asthma. Twenty-four cases gave a

definite history of aggravation of asthma during the summer months, and all but five gave a positive skin test to extracts of one or more pollens. The susceptibility to pollen is a highly specific one, because in several histories the onset date of asthma is exactly coincident with the onset date of cases of uncomplicated hay-fever, and in about half of all these cases the asthma ceases abruptly with the first frost.

On these accounts, it is assumed that pollen proteins are the cause of asthma in 12 patients, but the other 12 are complicated in that, although they give positive skin tests to pollens, they have asthma at other seasons of the year when there is no pollen in the air.

Horse Asthma. Sixteen cases gave a positive skin test to horse dander protein and gave histories at least compatible with and often too obvious of susceptibility to horses.

Twenty-one other patients gave a positive skin test to horse dander protein, but are not classed as horse asthmatics because there is absolutely nothing in their history or in their daily life which made it seem reasonable or even possible that horse dust or horse "emanation" might cause their asthma. The positive skin test is unexplained.

Food Asthma. Only two cases in this particular series gave a history of violent susceptibility to food,—one, a child, was susceptible to eggs; the other, a man of 25, had been always susceptible to fish but was in every way normal so long as he avoided eating or handling this food or licking the fish glue on postage stamps.

INTRINSIC ASTHMA.

Gastro-Intestinal. In five cases, derangements of the gastro-intestinal tract seemed to be a possible cause. A peptic ulcer demonstrated by x-rays, indigestion and constipation were the associated conditions, treatment of which helped the asthma markedly.

Bronchitis. This heading is given because the attacks of asthma in these 24 cases came on after a "cold" and recurred only at relatively long intervals and at times which were not associated with exposure to pollens, to danders, to special foods, or other foreign proteins.

"Winter Asthma" and Chronic Bronchitis are included in 30 cases of emphysema. The two groups are differentiated because, while the cases of "winter asthma" have symptoms only in cold weather, the others have asthma practically continuously.

Tuberculosis was found in 6 cases. In 4 of these the onset of asthma appeared to be coincident with the onset of the tuberculosis, and a causal relationship was therefore considered probable.

Nose and Teeth. In spite of the very favorable reports in the literature on the result of treating bronchial asthma by operating on the nose and teeth, only 4 cases in this report seemed worthy to be grouped here.

Miscellaneous. The 10 cases include the association of asthma with pregnancy (2), with catamenia (2), with enlarged bronchial lymph nodes (3), with lordosis (1), with obscure circulatory disturbances (2).

A general survey of the cases reveals several very interesting observations. The cases of extrinsic asthma vary very widely from the cases of intrinsic asthma in several ways. First, they are only a little more than half as numerous; second, the age at onset averages only 12 years instead of 26 years; and, lastly,—which is a very remarkable and important point,—cases of extrinsic asthma have a family history of either asthma, hay-fever, or food poisoning (strawberries, etc.) in 58.7%, while the cases of intrinsic asthma have such a family history in only 10.5%.

Although it has been thought for a long time that asthma was simply an expression of some disturbance of the nervous or autonomic system, there is abundant evidence to show that there are other reasonable explanations in most of the cases. It is possible to produce an attack of asthma in many cases of the extrinsic group by an artificial injection of the foreign protein in question, and to do this without warning of any kind—a fact which is of the greatest significance.

Careful study has so far failed to reveal any abnormal anatomy or physiology in these patients. One hundred and eighty-four differential blood smears done in 123 cases have shown a relatively constant eosinophilia averaging about 5%, but there has appeared no significant difference between the eosinophilia in cases of extrinsic from that in cases of intrinsic asthma, nor any significant difference in the counts made during and between the asthmatic attacks in either divisions.

Attention is called to the fact that asthma has been recorded as a symptom of vagotonia—the conditions resulting from a heightened tonus in the cranio-sacral autonomic system. The resulting relief from the attack following

epinephrin injections is important evidence of this.

Further study in this direction will, it is hoped, solve the question of not only why certain people have a natural sensitiveness to foreign proteins, but also why this sensitiveness should result in asthma.

Treatment of asthma resolves itself into the treatment of the exciting cause in the individual patient.

When the history or the patient's experience is compatible with the skin tests as showing susceptibility to some foreign protein, repeated parenteral injections of that foreign protein will usually have a marked beneficial effect and may cure. Avoidance of the offending protein, if possible, is the simplest remedy. Cases of intrinsic asthma can be treated by mechanically removing the cause, but this does not often effect a permanent cure.

Emphysema cases do remarkably well on expectorants—especially potassium iodide. Repeated injections of the patient's own blood, removed and defibrinated, has temporarily relieved 2 patients, but has failed in 5 others.

Autogenous vaccines of organisms in the patient's sputum sometimes relieve temporarily.

Frequently unsuspected and apparently unimportant suggestions, such as a temporary change of residence, a slight temporary modification of the diet, small doses of calcium lactate, ether anesthesia, temporary rest in bed with full diet, correction of faulty position, have been of the greatest assistance, and not infrequently have led to a virtual cure.

One great difficulty is that in all these various methods there is rarely any good control because so many patients have intervals of freedom from attacks—which intervals have lasted for several years.

THE CONTROL OF COMMUNICABLE DISEASES.

BY D. M. LEWIS, M.D., NEW HAVEN, CONN.

THERE are two very significant facts relating to the public health that are dominant at the present time. The first is that we are in an era seeking the prevention of cases of such diseases. Secondly, we are placing diseases never previously recognized as "contagious," such as poliomyelitis and pneumonia, under the same restrictions for prevention as are applied and have been applied for previously accepted contagious diseases. Inasmuch as it is generally conceded that first, such restrictions have not influenced continued reduction of such contagious diseases, and because after we have been through an epidemic of one, poliomyelitis, for example, it is the consensus of opinion that there was lack of any proof of the case giving rise to another case (the convalescent case alone excepted, which should be borne in mind in connection with this discussion), it would seem timely to ask if we have to travel along the same old lines as laid down for the so-called contagious diseases, rather than to start at rock bottom. With case reports is there then possible a system which will prevent, as has not been possible previously? Is there then also a basis for prevention before case reports? That there is has been demonstrated by me by the results of the past four years compared to previous years and compared to other neighboring cities. The criterion of absence of return cases, infrequent secondary cases, and a most marked decrease of neighborhood secondary cases is fairly such a criterion. In that the results have been reached first by a demonstration that secondary and return cases are, like secondary neighborhood cases, measured not by a consideration of isolation of contacts who have been infected by the case, but by isolating the carrier who was among the contacts, any logical preventive system revolves around the carrier. To that end all present-day codes are of little practical value other than such regulations as have always been in force for the reporting of cases when the carrier is in the family quarantined. Based on my observations for the first two years, I drew up and have had in operation for one year the following code which is standard for the first five sections. The remaining sections are original and as elastic as are the varied phases of any one infection among every class of individual ill or attendant treating the case. I believe that it is adaptable for results in any and all infectious diseases having, as a base, sensible reason and observation rather than the usual present-day generally fast rule of time limits. The code is as follows:

ORDINANCE DE COMMUNICABLE DISEASES.

Be it ordained by the Board of Aldermen of the City of New Haven:

Section 869. It shall be, and is hereby made

the duty of the Board of Health to keep currently informed of the communicable diseases throughout the City, and to prevent the spread of these diseases.

Section 870. The following named diseases are hereby declared to be dangerous to the public health and made notifiable, and the occurrence of cases shall be reported as herein provided:

Group I—Communicable Diseases.

Asiatic cholera.
Diphtheria.
Dysentery,
(*a*) Amebic.
(*b*) Bacillary.
Favus.
German measles.
Glanders.
Measles.
Meningitis,
(*a*) Epidemic cerebrospinal.
Mumps.
Ophthalmia neonatorum.
Paratyphoid fever.
Poliomyelitis (acute infectious).
Scarlet fever.
Septic sore throat.
Smallpox.
Tuberculosis (all forms, the organ or part affected in each case to be specified).
Typhoid fever.
Typhus fever.
Whooping cough.
Yellow fever.

And venereal diseases as now or may hereafter be provided by the general statutes of the State of Connecticut.

Provided, that the Board of Health may, from time to time, or for any period of time, in its discretion declare additional or unusual diseases notifiable and subject to the provisions of this Act.

Section 871. Every person who treats or examines, for the purpose of diagnosis or treatment, any person suffering or afflicted with any one of the diseases made notifiable by the preceding section, shall report such case to the Department of Health within twelve hours after making a diagnosis that the disease is one that is required to be reported. Said report shall be transmitted either by telephone or in writing and shall give the following information:

1. The date when the report is made.
2. The name of the disease.
3. The time of onset or the duration of the disease.
4. The name and address of the patient.
5. Age, occupation, school attended, or place of employment of the patient.
6. Number of adults and of children in the household.
7. Name and address of the person making the report.

Section 872. Every teacher and every person in charge of any public or private school, including Sunday schools, shall report immediately to the Department of Health each and every case which he or she knows or suspects to be a case of a notifiable disease in persons attending or employed in his or her school.

Section 873. Every hospital, asylum, or other public or private institution for the treatment of the sick shall be provided, for display in its office, with a card upon which Sections 2, 3, and 4, of this Act shall have been printed in type not smaller than ten point. These cards shall not be less than 12 x 14 inches.

Section 874. It shall be the duty of said Department of Health, through its accredited agents, to maintain such adequate quarantine or isolation of those sick of, and those proven carriers of notifiable diseases as shall be sufficient for the protection of public health. Provided that, in suspected cases of communicable diseases, or in suspected carriers of such diseases, reasonable quarantine or isolation may be required of any individual or individuals or their premises.

Section 875. Said quarantine or isolation shall be officially made, by such reasonable rules and notices posted on, or in the premises, or otherwise published, as may be deemed necessary by the Department of Health to control danger to the public health from each notifiable disease.

Until said quarantine or isolation shall be officially made, no individual other than a wage-earner shall be removed from the premises until permission shall be given by the Department of Health, through its proper agents.

The termination, by recovery or otherwise, of all cases of notifiable diseases shall be reported by the physician, nurse, or other person in charge of the case to said Department of Health. No case of, or carrier of, such diseases

shall be officially released from quarantine or isolation save under the direction of the agents of said department. Provided that in any quarantine or isolation hospital the physician in charge may so release those sick, under the rules and regulations of the Department of Health, upon notification of the termination of the case to said department.

The requirements of the preceding section shall be applicable to physicians attending patients ill with any of the notifiable diseases in hospitals, asylums, or institutions, public or private; or when no physician is in attendance, by the nurse, midwife, father, mother, or other person in charge of the patient, each in the order named.

Section 876. Restrictions made on individuals in their relations to the public health shall be officially made and recorded by said Department of Health; likewise the termination of such restrictions. Provided that, during quarantine or isolation of any case, or of any carrier of a notifiable disease, either diagnosis may be reversed or said quarantine or isolation may be changed from that of the premises of the one sick to that of any proper quarantine or isolation institution, when conditions under the former state become such as to be a danger to public health.

Section 877. It shall be the duty of said Department of Health, through its accredited agents, to demand at all times proper disinfection or destruction of all infectious material during the course of and at the termination of any notifiable disease. The relation of such infectious material, and the paths by which it may be transmitted, directly or indirectly, to other individuals through the medium of domestic animals, insects, and through raw or prepared foods, shall be subject to such necessary supervision and control as shall be reasonable for the protection of the public health. The Department of Health, through its accredited agents, may compel screening of the premises or of patients sick with any of the diseases mentioned in Section 2, and may compel adequate sanitation of privy vaults and cesspools and the protection of their contents by proper construction, by screening against insects, and by the disinfection of all parts of such vaults and their contents, at such periods of time or at such intervals of time, as shall be deemed necessary for the protection of the public health. Provided that failure to comply with any provisions of the preceding section on the part of the tenant, lessee, or owner of said property or properties, said Department of Health, through its proper agents, may take such immediate action as shall be reasonable and adequate to protect the public health.

Section 878. It shall be unlawful for any unauthorized person to destroy, deface, remove, or obstruct any placard or other notice that has been posted as a warning to the public.

Section 879. Any violation of these regulations shall be subject to a penalty of not less than five (5) dollars, nor more than one hundred (100) dollars, for each and every offence.

Adopted by the Board of Aldermen, January 24, 1917.

Approved by the Mayor, January 29, 1917.

Operative and in effect February 5, 1917.

One especially important practical point dwelt on in previous articles is the importance of searching for the convalescent carrier. In that the majority of such were found in former times to have been declared well by the physician, but no such information had been given to the health authorities, the importance of seeing every infectious individual as soon as the physician is through with treatment is of the greatest value in preventing recurrent cases. The usual procedure of removal of the card of isolation and freedom of contact with further individuals, based on time limits, is the weakest point in prevention of all communicable diseases.

We are told that frequently the failure of cases to be reported is the cause of any frequency. To control such I have had in practice for the past two years a postal card notification of school absentees of over three half-day sessions. Those in sections where it was known that no physician would be called early or where the physician generally called was not to be relied on, would be immediately investigated. All neighborhood absentees where any known infectious disease existed or where the absentee had been a previous case, also demonstrated the value of follow-up work for demonstration of cases. The card is as follows, and is self-explanatory:

School ..... Room .....
Date 191
Name .....
Address .....
Now out of school—
Illness said to be .....

Sent from school
with sore throat .....
with vomiting .....

(Do not fill in.) (B. of H. Record.)
KL .....
Sc. .....
Me. .....
Sept. .....
Wh. Cgh. .....
Ch. Px. .....
C. Sp. M. .....
Grp. .....
Pneum. .....
Typ. .....
Herp. .....
Accid. .....
Personal .....
Family .....

With the demonstration that carriers were of much greater importance than cases for true prevention, the school card became available by impressing on the school teachers that nasal discharges other than watery head colds were cause for investigation. School physicians and nurses also were instructed to exclude or culture such. Illness in the family in other than school children is frequently found through questioning of the school child by the teacher, who in turn notifies me on the card. There is possible then a so very accurate knowledge of all illnesses, neighborhood and house, as to make possible a large proportion of the control. That left consists of illnesses among the older or younger, where there are no school children. If now we take a nurse and localize her activities to such a part of the population as may be covered by at least weekly visits, there may be gained a measure of control. Inasmuch as I have shown that there are factors which assist in the making of and the continuing of individuals as carriers, I have gone further in this latter step with the work of the nurse. On her initial survey she not only records the number of children and their individual condition as to present or previous illnesses or as to being possible carriers, but she also records the individual sanitary defects of toilets, handling milk and food, and, in general, the unsanitary surroundings, including dampness of basements, which is one of the special factors. The correction of such is a matter for reference to other departments. While in terms then of communicable diseases, the information obtained by such fundamental work makes possible a hitherto unrealizable coördination of all health activities as to each and every bureau even in advance of complaints. The sum-total brings us back to the basis of the old public-health control of disease.

If then the system be made exact by sufficient nurses to be the recording eyes of each and every district, we can uncover all cases of each and every disease, as well as the carriers. The latter element is that of preparedness for the prevention of diseases and, successful as it has been proven by me in diphtheria and scarlet fever, might better be applied for controlling all communicable diseases rather than the application of regulations which have not controlled previously known so-called contagious diseases.

SUMMARY.

Health authorities are directly responsible for the frequency of communicable diseases. A system for such control should reach further than the present-day dependency of reporting of cases by physicians. There is possible a system for the investigation of and the finding of those individuals at the time they are carrying, in inflammatory secretions, definite causative organisms of communicable diseases. Such a system, fully developed, includes the previously predominant sanitation of premises as an important adjunct to the sanitary supervision of individuals, coördinating all the health activities. The definiteness of results obtained from such in terms of demonstrable abnormalities of carriers in the respiratory diseases studied (the work of others on typhoid fever is in accord), is a logical reason for such investigation of all communicable diseases.

IDIOPATHIC EPILEPSY A SYMPATHICOPATHY.

By Edward A. Tracy, M.D., Boston.

Previous research work by the writer had established the fact that the normal reaction of the skin to a gentle stroke with a suitable instrument, such as a wooden tongue depressor, is a brief-lasting vasodilation, followed by a vasoconstriction in the stroked area lasting a couple of minutes.[1]

One day, on testing a patient with idiopathic epilepsy, he noted with astonishment the intensity in color and the exceeding long duration of the vasoconstriction reaction that fol-

lowed the stroking. Later, he was struck by the variation at different times in the intensity and duration of the vasoconstriction reaction in this case, and the irregularity in point of time of its appearance—it sometimes appearing six seconds after applying the evoking stroke, at other times not until thirty seconds had elapsed. All this was found, on comparison with the reactions obtained in healthy individuals, to be decidedly abnormal. Objective phenomena that were visible and measurable in epilepsy certainly invited careful study. For a period of two and a half years this case was carefully observed, vasoconstriction reaction tests systematically made twice a day for a large part of that time, the occurrence of convulsive attacks and other physical phenomena were noted, and the observations were carefully recorded. Ninety other cases of idiopathic epilepsy were examined during that time and the objective phenomena observed in them were recorded. The data thus gathered, constituting some seventeen hundred observations, together with the photographs taken of vasoconstriction

PLATE A.—Showing vasoconstriction spots and pigment spots; also, the vasoconstriction reaction to stroking, which shows faintly, the plate having been exposed at the beginning of the reaction.

PLATE AA.—Showing vasoconstriction spots and pigment spots as in Plate A; also newborn vasoconstriction spots (near elbow of the right forearm) and the fully developed vasoconstriction reactions to stroking. Note the difference in these reactions on the forearms, though evoked with the same instrument. This plate is from a photo taken a minute after that from which Plate A is taken.

phenomena, are the basis of this study of epilepsy.

At the outset it must be stated that these observations were made and recorded without any idea of their signification. The phenomena noted—physical objective facts—were deemed, as such, worthy of careful observation and record. The records, a portion of which are here copied, remain as originally made, save the numbering of the observations, since done for convenience. A long period of observation

PLATE B.—Showing a chronic vasoconstriction spot (near center of forearm) and pigment spots.

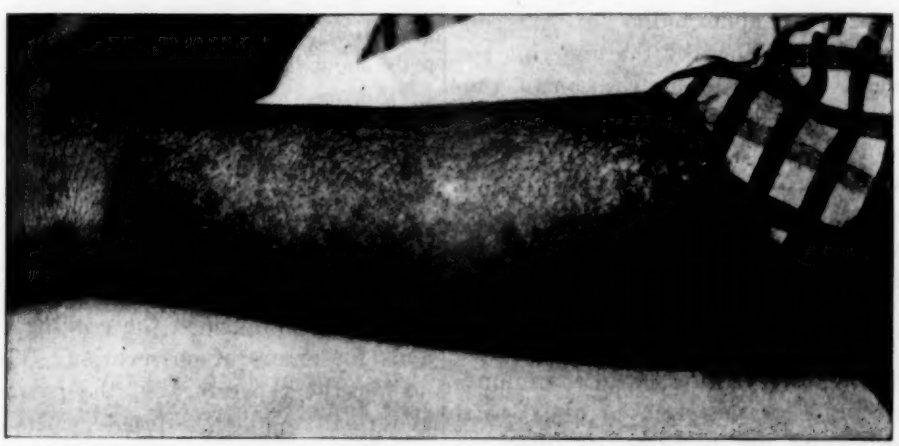

PLATE BB.—Showing the same as Plate B, and also a newborn vasoconstriction spot (located about ¼ inch from edge of sleeve) less than a minute old, as this plate is from a photo taken one minute after that from which Plate B is taken.

and a large gathering of facts reveal—as will be shown—that idiopathic epilepsy is a sympathicopathy, a disease of the sympathetic neurones.

Before proceeding to study the recorded observations, it may not be amiss to discuss briefly the phenomena of reflex vasoconstriction—the vasoconstriction reaction that is evoked by stroking the skin. The white streak that follows stroking the skin of a normal individual and lasts a couple of minutes is a vasoconstriction reaction, caused by the involved blood vessels becoming constricted and squeezing out the blood that gives color to the skin. This reaction cannot be attributed to a local smooth-muscle reaction brought about by the application of mechanical stimuli, for the muscle tissue does not come in contact with the mechanical irritant. Further, in the normal individual there is a difference in the reaction time of the face and the forearm,—the vasoconstriction coming quicker in the forearm after stroking than in the face,—although the skin structure is the same. The vasoconstriction is evidently brought about by the vasoconstriction nerves, for on stroking the face, a diffuse vasoconstriction frequently occurs—outside the stroked area. This can be explained only by nerve action. Moreover, the vasoconstriction reaction to stroking has all the elements of a true reflex, viz.: stimuli going over afferent fibers (the sensory nerves innervating the skin), stimuli coming over efferent fibers (the vasoconstrict-

ors), and muscular action (the vasoconstriction that results).

The vasoconstriction reaction to stroking, depending, as it does, upon nerve action, it follows that variations in the reaction time (the reaction time is the time, in seconds, that it takes for the reaction to become visible after making the evoking stroke) depend upon the irritability of the nerves involved in the reaction. If the sensory nerves are normal (other elements of the reaction being equal), it follows that the variations in the reaction times must be due to the condition of the vasoconstriction fibers,—the sympathetic neurones. That the sympathetic neurones are abnormal in idiopathic epilepsy is proven by observations made on the vasoconstriction spots observable in this disease, and by the photogravures published with this essay. The white spots observed on the forearms of patients were seen to become whiter at times, to fade away at other times, so that there could be no doubt of their being due to vasoconstriction. As there were no stimuli from without, as in the case of reflex vasoconstriction, it is evident the spots demonstrate an abnormal discharge of stimuli over vasoconstrictor, sympathetic fibers. Further proof of this abnormality of vasoconstrictor nerves is furnished by the unerring eye of the camera, which caught vasoconstriction spots in the very making, as it were. Plates A and B, and AA and BB are of the same objects, the forearms of an epileptic (Case 1 in the records), the plates AA and BB having been exposed to the objects one minute after the plates A and B had been exposed. On both pates AA and BB are seen vasoconstriction spots not appearing in the plates A and B. These spots, therefore, had origin in the minute of time elapsing after the plates A and B had been exposed—and are pictures of newborn vasoconstriction spots. They demonstrate a pathologic discharge of stimuli along sympathetic fibers, originating evidently from diseased nerve cells.

The vasoconstrictors, sympathetic neurones, already shown to be abnormal by the evidence of the vasoconstriction spots, are farther involved in the abnormalities of the vasoconstriction reaction time, which evidently depends upon the irritability of the sympathetic neurones involved in the reaction. The records gathered in the study of ninety cases of idiopathic epilepsy show the character of some of the abnormalities detected in the sympathetic neurone reactions, and their relation to convulsions and other phenomena of epilepsy.

CASE 1. H. D., female, aged 16 years. Convulsions in infancy for two weeks. Measles at five years. At seven years attacks of petit mal, which changed to attacks of grand mal at eight years. Convulsions since then have increased in severity, until they averaged sixteen attacks every month from her eleventh to her fifteenth year.

Observation 13, Aug. 9, 1916. Reaction time: left face, 14 seconds; right face, 26 seconds. Obs. 14. Two white spots were noted on the right forearm, one of which was seen to fade and return again.

Observation 13 shows a marked difference in the reaction times of the face, the right being slower than the left. In the normal individual these reactions appear on both sides of the face in equal times after the evoking stroke is made. Normally the face reactions balance. Obs. 78. Sept. 1, 1916. Reaction time: left forearm, 11 seconds; right forearm, 25 seconds.

In the normal individual the reaction time for reflex vasoconstriction on both forearms is the same. The lack of balance—unequalness—in the reaction times of both sides of the face and of both forearms, shown in the above observations, was frequently observed. The records show that in a series of observations made in this case during the period from August 1, 1916, to April 3, 1917, it was noted 198 times out of 403 tests of the vasoconstriction reactions made during that time. In 73 observations made on the vasoconstriction reactions, in 59 other cases of idiopathic epilepsy, this abnormality was recorded 42 times. These figures made an allowance in the readings of four seconds for errors of observation. There need be no question, therefore, of the frequency of this abnormality in this disease. Besides this inequality in the reaction times of both sides of the face and of both forearms, there is a continual variation in the reaction times; apparently without rule or reason they vary up and down, at one time quicker on the right side, at another time quicker on the left. This continual variation in the reaction times is shown by the following observations copied from the records of Case 1. Five successive observations for ten periods, a month apart, are here copied.

Sept. 5, 1916. Obs. 87, at 1 p.m. Reaction time: left forearm, 13 seconds; right forearm, 20 seconds; left face, 11 seconds; right face, 10 seconds. Obs. 88. 6 p.m. Reaction time: left

forearm, 13 seconds; right forearm, 15 seconds, left face, 16 seconds; right face, 12 seconds.

Sept. 6, 1916. Obs. 89. 11.30 a.m. Reaction time: left forearm, 13 seconds; right forearm, 11 seconds; left face, 15 seconds; right face, 15 seconds. Obs. 90. 6 p.m. Reaction time: left forearm, 18 seconds; right forearm, 22 seconds; left face, 10 seconds; right face, 13 seconds.

Sept. 7, 1916. Obs. 91. 12.15 p.m. Reaction time: left forearm, 11 seconds; right forearm, 17 seconds; left face, 11 seconds; right face, 16 seconds.

Oct. 7, 1916. Obs. 168. 1 p.m. Reaction time: left forearm, 16 seconds; right forearm, 16 seconds; left face, 14 seconds; right face, 6 seconds. Obs. 170. 7 p.m. Reaction time: left forearm, 12 seconds; right forearm, 17 seconds; left face, 12 seconds; right face, 8 seconds.

Oct. 8, 1916. Obs. 171. 11.30 a.m. Reaction time: left forearm, 16 seconds; right forearm, 14 seconds; left face, 8 seconds; right face, 14 seconds. Obs. 173. 7.30 p.m. Reaction time: left forearm, 15 seconds; right forearm, 13 seconds; left face, 7 seconds; right face, 9 seconds.

Oct 9. 1916. Obs. 175. 1 p.m. Reaction time: left forearm, 20 seconds; right forearm, 15 seconds; left face, 10 seconds; right face, 12 seconds.

Nov. 5, 1916. Obs. 264. 11 a.m. Reaction time: left forearm, 20 seconds; right forearm, 14 seconds; left face, 19 seconds; right face, 18 seconds. Obs. 266. 7.15 p.m. Reaction time: left forearm, 19 seconds; right forearm, 19 seconds; left face, 12 seconds; right face, 12 seconds.

Nov. 6, 1916. Obs. 268, 9 a.m. Reaction time: left forearm, 19 seconds; right forearm, 19 seconds; left face, 16 seconds; right face, 17 seconds. Obs. 270. 7.30 p.m. Reaction time: left forearm, 21 seconds; right forearm, 16 seconds; left face, 13 seconds; right face, 10 seconds.

Nov. 7, 1916. Obs. 271. 8.40 p.m. Reaction time: left forearm, 13 seconds; right forearm, 15 seconds; left face, 16 seconds; right face, 14 seconds.

Dec. 5. 1916. Obs. 394. 8.45 a.m. Reaction time: left forearm, 14 seconds; right forearm, 13 seconds; left face, 11 seconds; right face, 14 seconds. Obs. 396. 7 p.m. Reaction time: left forearm, 17 seconds; right forearm, 13 seconds; left face, 10 seconds; right face, 10 seconds.

Dec. 6, 1916. Obs. 399. 9 a.m. Reaction time: left forearm, 15 seconds; right forearm, 20 seconds; left face, 13 seconds; right face, 14 seconds. Obs. 401. 7 p.m. Reaction time: left forearm, 13 seconds; right forearm, 17 seconds; left face, 8 seconds; right face, 11 seconds.

Dec. 7, 1916. Obs. 404. 9 a.m. Reaction time: left forearm, 18 seconds; right forearm, 16 seconds; left face, 13 seconds; right face, 14 seconds.

Jan. 4, 1917, Obs. 496. 9 a.m. Reaction time: left forearm, 25 seconds; right forearm, 17 seconds; left face, 16 seconds; right face, 20 seconds. Obs. 497. 7 p.m. Reaction time: left forearm, 18 seconds; right forearm, 15 seconds; left face, 15 seconds; right face, 10 seconds.

Jan. 5, 1917. Obs. 499, 9 a.m. Reaction time: left forearm, 15 seconds; right forearm, 15 seconds; left face, 16 seconds; right face, 14 seconds. Obs. 500. 7.30 p.m. Reaction time: left forearm, 15 seconds; right forearm, 15 seconds; left face, 10 seconds; right face, 11 seconds.

Jan. 6, 1917. Obs. 502. 10.15 a.m. Reaction time: left forearm, 12 seconds; right forearm, 17 seconds; left face, 15 seconds; right face, 16 seconds.

Feb. 5, 1917. Obs. 584. 8 p.m. Reaction time: left forearm, 18 seconds; right forearm, 14 seconds; left face, 13 seconds; right face, 11 seconds.

Feb. 6, 1917. Obs. 585. 7.30 p.m. Reaction time: left forearm, 10 seconds; right forearm, 15 seconds; left face, 9 seconds; right face, 11 seconds.

Feb. 7, 1917. Obs. 587. 7.30 p.m. Reaction time: left forearm, 15 seconds; right forearm, 14 seconds; left face, 15 seconds; right face, 14 seconds.

Feb. 8, 1917. Obs. 588. 7 p.m. Reaction time: left forearm, 15 seconds; right forearm, 13 seconds; left face, 13 seconds; right face, 12 seconds.

Feb. 10, 1917. Obs. 591. 8 p.m. Reaction time: left forearm, 16 seconds; right forearm, 10 seconds; left face, 12 seconds; right face, 16 seconds.

March 7, 1917. Obs. 640. 9 a.m. Reaction time: left forearm, 20 seconds; right forearm, 13 seconds; left face, 15 seconds; right face, 14 seconds. Obs. 641. 8 p.m. Reaction time: left forearm, 12 seconds; right forearm, 17 seconds; left face, 12 seconds; right face, 11 seconds.

March 9, 1917. Obs. 643. 8 p.m. Reaction time: left forearm, 15 seconds; right forearm, 15 seconds; left face, 12 seconds; right face, 11 seconds.

March 10, 1917. Obs. 645. 9 a.m. Reaction time: left forearm, 19 seconds; right forearm, 20 seconds; left face, 12 seconds; right face, 17 seconds. Obs. 646. 7 p.m. Reaction time: left forearm, 14 seconds; right forearm, 20 seconds; left face, 14 seconds; right face, 12 seconds.

April 5, 1917. Obs. 705. 9 a.m. Reaction time: left forearm, 24 seconds; right forearm, 15 seconds; left face, 15 seconds; right face, 13 seconds. Obs. 706. 7.30 p.m. Reaction time: left forearm, 18 seconds; right forearm, 15 seconds; left face, 10 seconds; right face, 10 seconds.

April 6, 1917. Obs. 708. 9.30 a.m. Reaction time: left forearm, 15 seconds; right forearm, 16 seconds; left face, 11 seconds; right face, 12 seconds. Obs. 709. 8 p.m. Reaction time: left forearm, 11 seconds; right forearm, 11 seconds; left face, 10 seconds; right face, 10 seconds.

April 7, 1917. Obs. 711. 10.30 a.m. Reac-

tion time: left forearm, 15 seconds; right forearm, 9½ seconds; left face, 12 seconds; right face, 13 seconds.

May 5, 1917. Obs. 804. 9.30 a.m. Reaction time: left forearm, 13 seconds; right forearm, 11 seconds; left face, 13 seconds; right face, 14 seconds. Obs. 805. 8 p.m. Reaction time: left forearm, 14 seconds; right forearm, 15 seconds; left face, 16 seconds; right face, 12 seconds.

May 6, 1917. Obs. 807. 10 a.m. Reaction time: left forearm, 27 seconds; right forearm, 20 seconds; left face, 13 seconds; right face, 13 seconds. Obs. 809. 8 p.m. Reaction time: left forearm, 13 seconds; right forearm, 15 seconds; left face, 14 seconds; right face, 12 seconds.

May 7, 1917. Obs. 811. 9 a.m. Reaction time: left forearm, 18 seconds; right forearm, 17 seconds; left face, 13 seconds; right face, 15 seconds.

June 7, 1917. Obs. 910. 9 a.m. Reaction time: left forearm, 17 seconds; right forearm, 15 seconds; left face, 13 seconds; right face, 9 seconds.

June 8, 1917. Obs. 912. 9 a.m. Reaction time: left forearm, 16 seconds; right forearm, 14 seconds; left face, 18 seconds; right face, 15 seconds. Obs. 913. 7.30 p.m. Reaction time: left forearm, 15 seconds; right forearm, 15 seconds; left face, 11 seconds; right face, 10 seconds.

June 11, 1917. Obs. 915. 9 a.m. Reaction time: left forearm, 23 seconds; right forearm, 18 seconds; left face, 20 seconds; right face, 17 seconds. Obs. 916. 7 p.m. Reaction time: left forearm, 18 seconds; right forearm, 18 seconds; left face, 13 seconds; right face, 12 seconds.

Despite the irregular, apparently erratic behavior of the reaction times manifested in the foregoing observations, a most interesting relation was discovered between the reaction times and the onset of convulsions. A careful daily record of the reaction times and of the occurrence of convulsions, during a period of two years, revealed this relation between them: a quickening of one or more of the reaction times took place within twelve hours before the onset of convulsions. Since the vasoconstriction reaction time indicates the irritability of the sympathetic neurones involved in the reaction, this demonstrates that an increase in irritability is manifested by sympathetic neurones preceding a convulsion. The following observations, copied from the records of Case 1, show the frequency of this lessening of the reaction time, more especially the face reaction time, preceding convulsions.

Sept. 12, 1916. Obs. 102. 12.30 p.m. Reaction time: left forearm, 12 seconds; right forearm, 13 seconds; left face, 10 seconds; right face, 11 seconds. Obs. 103. 6 p.m. Reaction time: left forearm, 8 seconds; right forearm, 13 seconds; left face, 10 seconds; right face, 11 seconds. Ten minutes after the above observation was made an attack of convulsions occurred.

Sept. 25, 1916. Obs. 135. 6 p.m. Reaction time: left forearm, 17 seconds; right forearm, 12 seconds; left face, 14 seconds; right face, 10 seconds. That night, at 2.30, patient had an attack of convulsions, followed the next day (Sept. 26) by five attacks, at 8.15, 11.40 a.m., and 2.10, 3.30, and 5.20 p.m.

Sept. 26, 1916. Obs. 138, 5.15 p.m. Reaction time: right forearm, 9 seconds; right face, 12 seconds. This incomplete testing of the reaction times, immediately preceded the attack of convulsions at 5.20 p.m., the attack preventing the complete testing.

March 28, 1917. Obs. 682. 8 p.m. Reaction time: left forearm, 13 seconds; right forearm, 10 seconds; left face, 10 seconds; right face, 9 seconds. The following morning, at 3 a.m., and 7.30 a.m., the patient had attacks of convulsions, and attacks at 10 and 11.30 a.m. An hour before the attack at 10 a.m., the following observation of the reaction times was made. Obs. 684. 9 a.m., March 29, 1917. Reaction time: left forearm, 22 seconds; right forearm, 13 seconds; left face, 11 seconds; right face, 14 seconds.

Jan. 19, 1917. Obs. 540. 9 a.m. Reaction time: left forearm, 15 seconds; right forearm, 12 seconds; left face, 13 seconds; right face, 11 seconds. Patient had an attack of convulsions at 1 p.m., four hours after the above observation was made.

Oct. 5, 1916. Obs. 165. 7 p.m. Reaction time: left forearm, 12 seconds; right forearm, 10 seconds; left face, 11 seconds; right face, 10 seconds. On the following morning at 6.30 a.m. the patient had an attack of convulsions.

Oct. 12, 1916. Obs. 185. 7 p.m. Reaction time: left forearm, 15 seconds; right forearm, — seconds; left face, 12 seconds; right face, 8 seconds. The next morning at 7.45, patient had attack of convulsions.

Oct. 13, 1916. Obs. 187. 8 p.m. Reaction time: left forearm, 14 seconds; right forearm, 11 seconds; left face, 10 seconds; right face, 11 seconds. The next morning at 7 o'clock, patient had an attack of convulsions.

Oct. 22, 1916. Obs. 218. 10.30 a.m. Reaction time: left forearm, 13 seconds; right forearm, 15 seconds; left face, 15 seconds; right face, 10½ seconds. Patient had an attack at 3 p.m., four and a half hours after the taking of the reaction times.

Nov. 7, 1916. Obs. 274. 7.30 p.m. Reaction time: left forearm, 18 seconds; right forearm, 16 seconds; left face, 13 seconds; right face, 10 seconds. Patient had attacks of convulsions at 4 and 6 o'clock the next morning.

(To be continued.)

Society Report.

THIRTY-SECOND ANNUAL MEETING OF THE AMERICAN ORTHOPEDIC ASSOCIATION.

ARMY MEDICAL SCHOOL, WASHINGTON, D.C., APRIL 22-23, 1918.

ORTHOPEDIC WAR HOSPITALS, THEIR REQUIREMENTS AND EQUIPMENT.

LIEUT.-COL. CLARENCE L. STARR, R.A.M.C., gave an address on "Orthopedic War Hospitals, Their Requirements and Equipment." These organizations, he said, should be termed "orthopedic," not "reconstruction" centers. Treatment of fractures involved consideration of many important points: first, fractures with solid union should never be operated on, even when shortening occurred; second, fractures with infection should not be united, even if 6 months had elapsed since injury,—the presence of streptococci had been demonstrated half a year later; third, the sliding graft had not been found successful,—the autogenous graft from the tibia being the most satisfactory; fourth, no suppurating fracture should be united. In regard to operations upon nerves, no one could, as yet, speak with authority on these injuries. It could be said, however, that if careful examination of the nerve lesion, and testing the galvanic, electric and protopathic response, gave no result, extirpation was indicated. A frequent mistake was to try to suture the nerve when the function of adjacent muscles was destroyed. In the diagnosis of stiff cartilage the surgeon should be guided by the orthopedic surgeon. Sixty per cent. of these cases were wrongly diagnosed and were made worse by operation. Histories of this kind were unreliable, as one patient was apt to suggest the idea to another who could deceive the surgeon. In regard to tendon transplantation, the successes following this treatment in the arm were marvelous, but not in the leg on account of the weight-bearing function of the latter. In regard to manufacture of artificial limbs: in Canada this was under government control, which eliminated commercial speculation and competition, and assured a standardization of articles manufactured. It was found also that an orthopedic hospital, connected with a general hospital, was satisfactory, as it enabled orthopedic surgeons and neurologists to coöperate. The administrative work of both was combined, to secure economic results. One inspector supervised both hospitals. One assistant surgeon cared for 500 patients, with one junior surgeon and anesthetist to each 100 patients. Functional cases were sent to the orthopedic surgeon for diagnosis and to detect malingering. It was found a mistake to put an orthopedic surgeon in a general hospital, as his work was sidetracked. His services could be put to good use in the clearing station behind the lines, to treat joint lesions. In the post-operative treatment of the wounded, massage, electro- and hydrotherapy had a useful place. The gymnasium was a very active part of the whole scheme. Games were found to effect the patient's cure, unconsciously; while the curative workshops tended to raise greatly the morale of the patient. This branch of the treatment bridged the gap between hospital and civil life. The men were employed on artificial limb making, machine shop work, boot and clothing work. For this work the men were allowed to wear uniform; the hospital "blue" being used simply to discipline a refractory patient. Prolonged hospitalization and the hospital blue had a depressing effect, and the use of the uniform and the sense of accomplishment went far to restore confidence to the wounded man and to enable him to return to useful citizenship.

CAPTAIN F. C. KIDNER, M.R.C., A.E.F., gave a brief description of the work in Hyde Park, London, at St. Katharine's Lodge, a beauful roomy house, with spacious grounds, loaned to the British Government by Mr. Solomon of New York. This hospital, although used for British soldiers, was under the American Red Cross. It contained 50 officers' beds, and there was always a long waiting list. The American Red Cross had entire supervision, except as regards disability decisions. The patients proved very willing and anxious to carry out treatment. The masseur employed was a blind soldier who had become expert at this work. This gift of Mr. Solomon, by placing English officers under control of an American staff, was serving as a most efficient link in the promotion of good understanding between the two great English-speaking nations.

DISCUSSION, COL. STARR'S PAPER.

MAJOR J. A. HORNSBY said that in the civil hospitals in this country the unanimous conclu-

sion had been reached that when the patient entered the hospital he was entitled to treatment for whatever might ail him. If any complications arose in his condition he should receive treatment for the same. The hospital, therefore, had to be a general hospital. To him, Major Hornsby said, it was unthinkable that a patient with an eye condition should have to be moved to an eye hospital; yet that very thing was occurring lately in the large cities in this country. He knew of a case that developed pneumonia; the patient had to be moved because he could not be treated in the general hospital. In the new field upon which they were now embarking, it would be found necessary to change this phase of the question. At first, when it was decided necessary to create an army, it was decided to take only able-bodied men. A little later, certain remedial defects were noted, and the men were required to submit to operation. Later still, another ruling took effect. He was more than pleased to hear Colonel Starr say that these defectives should not be operated upon. The profession should be outspoken about that and not attempt to turn the Army into a curative establishment for defectives. He had been in many camps in this country and had seen men operated upon again and again to cure defects, without result. Before attempting to reconstruct defectives for active service, the available supply of men should be exhausted. The general hospitals now were for the care of diseases and injuries that had come upon men after becoming part of the military force, and the same thing should be true when they come back again. Then, if ever, they would be liable to complications of all sorts, and the hospitals should be qualified to take care of them. The hospital did not consist in equipment or capacity, but in the personality of its staff. It was not a collection of instruments and beds, but a place where men were competent to take care of the sick. It was easier to get equipment than to get competent men. It had been said that only in the special hospital did one find such personnel. That might be true, but Major Hornsby said that he had taken over three or four hospitals, amounting to a capacity of 2000 beds. These would be used as general hospitals, and it was expected that the trend of the hospital would follow the capacity of the men working in it. They would be great only if associated with prominent medical men.

MAJOR W. G. ERVING said that this subject of orthopedic war hospitals, introduced by Lieut.-Colonel Starr, was a tremendous one. Personally, he thought that there was no question that the orthopedic hospital should be absolutely separate. In England, experience had shown that those orthopedic centers which were doing the best work were those separated from work of other kinds. Hospitals at Hammersmith and Leeds, which were entirely orthopedic and which were equipped with 2000 beds, were getting the best results. The next best plan was an orthopedic center, united to the general hospital only from an administrative point of view. This was an economic advantage; also, the services of specialists in various branches could be interchanged, without any interference in the actual orthopedic work. It was necessary for the orthopedic center to take charge of many chronic cases; many adjuncts would have to be called in,—such as electrotherapy, the gymnasium, the curative workshop,—which could be connected with the center in colony form. The workshops necessarily had to be very elaborate and complicated and it would be impossible to have these in a general hospital.

MAJOR S. C. BALDWIN, M.R.C., said that there had not been much to do so far in the general hospitals. They acted as distributing centers and the orthopedic cases were sent on to other places. Major Baldwin could not agree that it was a good plan to have the work of the orthopedic hospital in connection with that of the general hospital, as the orthopedic man would be put in as an assistant to the general surgeon and his special value would be lost. Naturally, in a general hospital, the general surgeon would take all he could, and would take everything unless the orthopedic man happened to have a good deal of backbone and insisted on taking all that belonged to him. There had hardly been time as yet to work out this point.

LIEUT.-COLONEL STARR said, in conclusion, that he thought it would be a great disaster in this country to use the orthopedic hospital as a subsidiary to the general hospital. That seemed to him to be the case of the tail wagging the dog. The plan to put the orthopedic hospital under the same administration as the general hospital had its advantages and disadvantages; the former being the chance to co-

operate with members of the staff in other branches. There were also economic advantages. In Canada the units were large separate hospitals and the patient was under control of the orthopedic man, except for questions of discipline and administration, which the orthopedic surgeon was not concerned with. Lieut.-Col. Starr said he sincerely hoped this would be worked out so that the orthopedic hospital would have its own staff, although he felt that general surgeons had a just claim to the work if they could do it as well as the orthopedic men. He had seen some of the best work done by a general surgeon with only short orthopedic training.

THE SPECIAL TRAINING BATTALION OF THE TWENTY-SIXTH DIVISION.

This subject was presented by CAPTAIN Z. B. ADAMS. This Battalion was established in March, 1917, with the object of the reclamation of as many men as possible by means of special training. Many serious physical defects were remedied and the men put into such physical condition that they could perform some service behind the line. It was found that 86% of cases could be thus improved. Fourteen per cent. of cases showed defects that entirely unfitted them for military service. Cases were divided into four groups with regard to seriousness of the defect. The classification was: I, men with faulty posture and slight pronation; II, men with metatarsalgia; III, men with acute strain or contracted tendons, faulty posture and back strain; IV, serious defects requiring operation. The camp was in no sense a rest camp. All work was done out of doors and was of a military nature. The men were gradually advanced through five companies, and the fifth company did really hard work. Three hundred and seventy-three cases had been under training and in six weeks the battalion had been able to return 88 men as fit to carry on military duty and not likely to break down.

THE VALUE OF CASUAL DETACHMENT AS TESTED AT CAMP CODY.

This paper was presented by CAPTAIN E. R. RICH. He said that the tendency was now to turn from hospital treatment to camp training. At first the man with flat feet was turned over to the hospital and he was apt to pass the good word along to his companions, so that the hospitals were filled with men with flat feet. It was found necessary, therefore, to deal with these cases outside of the hospital. Since the establishment of the first Casual Detachment work in Mexico, 8 out of 11 camps had followed suit. Such names as the "soldiers' salvage school" and the "orthopedic-back-to-duty class" had been bestowed on this work. The object of the work was to build up weak structures which were the cause of static foot defects.

It was found better to have a line officer to maintain discipline, as he could do this better than the medical officer. To give the best results the soldiers must be segregated. Military habits were not relaxed in order that the men might be impressed with the reality of war. The work was made so hard and monotonous that the men were glad to get back to line duty. Class A were graduates for line duty and Class B comprised the malingerers. These men were put under such hard and intensive drill that they were glad to get back to the line, having first been compelled to sign the oath of cure. There were four drills every morning, six in the afternoon, and no difference was made for Sundays. The officers were there to restrain over-action in the few and to stimulate action in the many. These methods had eliminated the over-congestion in the hospitals and had resulted in the return of 60% of the men to the line. There was no doubt that orthopedic methods in this war had helped orthopedic surgery to win its spurs. One of the most helpful of orthopedic measures was to be found in the training of the Casual Detachment.

(To be continued.)

Book Review.

The Practice of Pediatrics. By CHARLES GILMORE KERLEY, M.D., Professor of Diseases of Children, New York Polyclinic Medical School and Hospital. Second edition, revised and reset. Philadelphia and London: W. B. Saunders Company, 1918.

Many changes have been made in this, the second edition, of this well-known work. Many new articles have been added and a number of the chapters have been rewritten, while a great deal of old material has been eliminated. This book will continue to be, as it has been, most useful to physicians, whether they are in general practice or specialized in the Diseases of Children.

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SICKNESS INSURANCE OR SICKNESS PREVENTION?

RESEARCH REPORT No. 6 of the National Industrial Conference Board for May, 1918, deals with the question, "Sickness Insurance or Sickness Prevention?" In this report, an attempt has been made to emphasize the enormous burden which sickness and physical disability place on society and industry. The necessity is imperative for a thorough study of the practical possibilities of a program of sickness prevention, with a view to its speedy adoption as a national policy. Examinations for military service disclosed the fact that one out of every three men was unfit for service. At least 5% of the entire male population is afflicted with venereal disease. The average annual loss by sickness of 40,000,000 wage-earners is seven days, which represents a loss of from $500,000,000 to $750,000,000. This estimate takes no account of the incalculable loss due to impaired efficiency on account of illnesses and disabilities that do not result in absence from work. Two factors largely contributing to these defects are feeble-mindedness and venereal disease. These conditions call for a vigorous policy of remedial action.

The problem of sickness and physical disability is of particular concern to industry. Maximum efficiency cannot be obtained from a force of workers one-fourth of whom are suffering from such disabilities as defective vision, tuberculosis, alcoholism, or venereal disease Industry cannot be held responsible for this; such conditions as overcrowding, poor ventilation, and insufficient lighting are contributing factors, and could be prevented.

The advisability of prevention of diseases can be questioned only on the ground of cost, and a determination of the question whether their prevention would involve an expenditure out of proportion to the probable benefit. It has been estimated that the total annual cost would amount to from $700,000,000 to $1,000,000,000. A program calling for such expenditure would challenge critical examination and compel convincing demonstration of its merit. The experience of those European countries which have adopted sickness insurance on a comprehensive scale has not resulted in a decrease of sickness; instead, it has failed as a preventive agency and has placed a premium on inefficiency and fraud.

Underlying these considerations, however, the fundamental fact remains that all sickness and disability which can be prevented reasonably should not be allowed to remain unremedied until they impose a burden on the individual and society. Preventive work in case of communicable diseases—such as typhoid fever, tuberculosis, pneumonia, and diphtheria—has been brilliantly successful. The results which have been achieved through local effort with limited funds establish the need for careful investigation of the further possibilities of sickness prevention under a definite national policy. An investigating committee should consider these salient features: reduction in infant mortality; supervision of the health of school children, including treatment of various common defects; systematic instruction in personal hygiene, diet and living conditions; improvements in sanitation, housing, and milk and water supply; extension of free hospital

and free clinical agencies; treatment of feeble-mindedness and venereal diseases; the effect of occupation on health of workers. Such a program would minimize the necessity for compensation in the case of unpreventable diseases, and would remove a large part of the misery and poverty which preventable diseases now impose on the individual, society, and industry.

PHASES OF INDUSTRIAL FATIGUE.

With the necessity for the development of the industrial efficiency necessary for war purposes the desire to conserve the human material engaged therein has been the natural outgrowth to be expected. On the whole, the capacity of the worker is limited by his liability to fatigue. It is essential to determine the usual conditions surrounding the question of fatigue before any industrial changes in conformity to it are justified. While laboratory experiments are valuable, their value lies almost wholly in the development of methods for the testing of fatigue points. For the present purposes, the laboratory methods must be largely reënforced, if not replaced, by practical work in the field. In the field investigations are included, however, the laboratory investigations of the sense acuities of the individual workers. The individual capabilities of the workers can be established and an insight had into some of the reasons for early and undue fatigue. But the main field investigations embrace such matters as output, quality and quantity, accidents, and power consumption. All these factors have a close relation to fatigue in the workers. Much valuable information can be had from industrial plants which have kept accurate statistical records of these factors, and fatigue investigations become much simpler. For the war work these records are essential in determining waste either of material or of the human factor.

Fatigue is the diminution of activity after activity. It is the unrelaxed tension of activity that causes fatigue after a period of work (Public Health Reports, vol. 33, no. 11). It is important to determine the effect on this unrelaxed tension of rest periods, meal time, sleep, etc. The ability to recuperate from the effects of fatigue depends upon the individual capacity as well as upon general working conditions. But where the work is of a monotonous nature which allows of practically no work pauses, the fatigue curve will develop quickly and will be on the downward grade the whole of the day, with no change in its contour. Where the nature of the work allows many pauses there may be no fatigue curve at all. It is in the monotonous occupations in which the question of fatigue and its attendant loss of efficiency and deterioration in health conditions enters so largely. The reduction of the hours of labor per day and of the total number per week is the least that can be done to overcome these conditions. The testing for the fatigue curve by a per hour method is not satisfactory from the laboratory standpoint, but in the field, because of the fluctuations in the industries, it is the only feasible plan. Probably the best index of the amount of fatigue developed in an industry, and the consequent loss of efficiency, is the rise of the accident incidence. Usually it may be said that the rise in the number of accidents is due to the loss of attention and alertness from fatigue. On the other hand, it may be due to a rise in the amount of work done, for with increased work every element connected with plant operation must necessarily increase. Increased number of operations increases the accident danger. But increased efficiency means increased power consumption. If the accident incidence rose with the increase of power consumption it would indicate an increase of the efficiency. The reverse conditions with respect to the consumption of power and the number of accidents, would indicate loss of attention and alertness from fatigue. Technically, the estimate is made by dividing the number of accidents per hour by the amount of power consumed. The result will be a curve of the loss of attention and alertness from hour to hour, irrespective of the amount of work done. While the hourly method of testing fatigue requires so many observations, yet if enough of them are made, and the output of factories that have reduced the number of hours of labor is compared with those that have not, a clear idea will be had of the effect of the reduction of the hours of labor on output and efficiency. The war industries in Europe have realized the good effect of the reduction of the hours of labor in accordance

with the capacity for fatigue. It must not be forgotten that even where there is fatigue the rapidity of the operations need not be reduced, but the number of accidents and missed operations increases. Attention and alertness are indicative, rather, of psychological fatigue than of physical fatigue, which is associated merely with rapidity of motion, under fatigue conditions, however, not accurate. Of course the sanitary conditions in a factory—light, heat, ventilation, etc.—as well as the initial health of the workers, influence to a great degree the whole question of fatigue capacity.

CARBOHYDRATES IN DIABETES.

IN the progress of our knowledge of the nature of diabetes there has been a marked reaction against the entire withdrawal of the carbohydrates from the dietary of the diabetic. For a time there was even a tendency to administer carbohydrates as a curative measure, and the "carbohydrate cure" seemed all but established. Then came the understanding that the carbohydrates cannot be withdrawn from the dietary of the individual without increasing the tendency to acidosis, or of precipitating a grave acidosis where previous to the carbohydrate withdrawal there was only a mild one. It is found that when the carbohydrate withdrawal is persisted in, acetone bodies soon appear in the urine. As the sugar disappears the acidosis appears. It must be understood that the presence of sugar in the urine is of importance only as indicating that the sugar is not being oxidized and utilized. As long as enough sugar is oxidized there is no harm in some or even a great deal passing through unoxidized, but as soon as the amount oxidized becomes deficient then acetone appears. Even in rather severe diabetes the organism can oxidize some sugar. If in these cases not enough carbohydrates are given to satisfy the meager demands and oxidizing powers of the organism, acidosis follows, so that in cases treated with carbohydrate withdrawal, in whom acidosis threatens, carbohydrates must be administered to forestall the event. Moreover, with the withdrawal of the carbohydrates, so necessary for the production of heat and energy, the organism draws upon the proteins of the body for its carbohydrates. It is shown, in fact, that with the increase of the carbohydrate intake there is a decrease in the protein consumption. Whether the protein of the body is utilized in great quantities, or more proteins are consumed to make up for carbohydrate deficiency, increased protein metabolism means a large increase in the metabolic burden of the body. For the organism with a defective metabolic system, as evidenced by the presence of diabetes, this added metabolic activity is very harmful. Besides, protein metabolism is the most potent factor in the production of acid; indeed, protein food may be called acid food. In addition to the natural hypoalkalinity of diabetes there is, then, the increased acid production—and acidosis is bound to follow. The administration of carbohydrates reduces the protein metabolism sufficiently to prevent acidosis, where the carbohydrate oxidizing power is not too far gone.

When the value of administering carbohydrates in diabetes was first understood it was thought that certain carbohydrates behaved differently from others. Oatmeal was supposed to have a special value as a carbohydrate cure because it was thought that the starch in it had a special action; that it had certain special ferments or extractives of value; or that it reduced the permeability of the kidneys to sugar. None of these hypotheses has any substantiation, and any value that oatmeal has in the so-called "oatmeal cure" must be ascribed to the general value of carbohydrate administration, where there is a defective carbohydrate oxidation, and where the organism is using up its own body proteins to make up the deficiency naturally withdrawn because of the metabolic condition, or artificially withdrawn in a mistaken notion of treatment.

The most recent conception of the proper treatment of diabetes takes into consideration the metabolic disturbance at the base of the disease, as well as the part that the carbohydrates play in the disease. The starvation treatment has for its object, therefore, the resting of the metabolic system for the period of the starvation. The subsequent dietary treatment no longer contemplates the withdrawal of the carbohydrates, but rather that they be given in sufficient quantities for the needs of the system, without necessitating drawing on the body proteins. On the other

hand, it is not intended to tax the metabolic processes by administering large quantities of food. Every element of food is reduced to the minimum needs of the body. When it is remembered that a reduction of half of every one's dietary would be beneficial rather than harmful, there need be no fear of underfeeding in an organism whose metabolic system is damaged. Most of all, is the protein kept at a minimum in order to reduce the tendency to acid production.

THE SIMULATION OF DISEASE.

THE fact of the simulation of disease has long been known to medicine, yet it has always been a difficult problem to detect the real simulator, that is, the voluntary one, who simulates for some selfish or ulterior purpose. All simulators are not, however, real or voluntary ones. Simulation of disease may occur in the insane, but particularly in those suffering from hysteria. The ability of the hysteric to simulate almost any disease is well known. Feigned injuries and diseases have long been a problem in accident jurisprudence. Here, nervous and spinal conditions are generally simulated. But it is important to distinguish between frank simulation and symptoms produced by trauma in those of inferior nervous constitution, which, although they are not organic in nature, savor very much of the idiopathic conditions in hysteria. It must be looked upon as hysteria where the exciting cause—the trauma—is patent.

Simulation of disease is usually carried out to avoid the carrying out of some just obligation or duty. Where the work to be done is of a group or unit nature, as aboard a vessel, and where the efficiency of the work depends upon the honest application of every worker, it is essential to detect the malingerer. Besides, the malingerer must not be allowed to shove his work on someone else's shoulders with impunity. The ship surgeon must be a knower of men, besides having a working familiarity with the usual types of simulation in order to distinguish the malingerer from those really ill, and in order that a grave injustice and often irreparable harm be not done to one really ill, but, under suspicion of simulation, forced to work. But military duty represents by far the most fertile field for the malingerer. The number concerned in military duty enormously multiplies the number who are likely to simulate disease in an effort to avoid unpleasant work, and the methods used in simulation become very numerous and confusing. It goes without saying that it is essential to detect the malingerer and to study and become familiar with the various methods employed, both as a matter of public policy and general justice to those who do not employ these methods. Numerous observers, especially in this war, have given valuable assistance in solving this problem. As a result of their work much of the malingering is capable of detection by those on the lookout for it. On the whole, however, the principle of detecting the malingerer depends upon bearing in mind the characteristics of the disease the malingerer intends to simulate. Usually it is hard to mimic Nature in every detail. Unusual variations must always excite suspicion, and if they cannot be detected as simulations by the ordinary methods, it is justifiable to isolate and observe the suspects. Often this is the only way to clear up any doubtful case.

There is almost no disease or defect that the ingenuity of the malingerer cannot simulate. Simulations may range from simple skin lesions induced by irritants to profound constitutional diseases. Albuminuria and renal disease is often simulated by the ingestion of large quantities of sodium chloride and milk; diabetes, with the injection of phloridzin; heart irregularities are produced with cordite, nitroglycerine, aconite, etc.; jaundice, with the ingestion of picric acid; hernia, with the injection of paraffin, and so on (Public Health Reports, Vol. 23, No. 45). The range of methods is almost limitless and can overcome the watchfulness of even the most alert. But it is just as necessary to exclude the unfit from duty as it is essential to detect the malingerer; otherwise much confusion and injustice will result.

MEDICAL NOTES.

HEALTH OF PORTO RICO.—The Commission of Health of Porto Rico has submitted a report

for the year 1917. The report states that Porto Rico has become recognized as the best of the West Indies from a sanitary point of view and one of the best under the American Government. The provisions of the Jones Act, by which the department of health was created, are stated. The report of the Assistant Director of Sanitation describes municipal charity, medical attendance, hospitals, first-aid stations, poor relief, rural inspection; also, street cleaning, drainage, slaughter-houses, meat shops, bakeries, water works, and milk depots. Other reports of the draftsman, the veterinary division, the chemical laboratory, and the division of transmissible diseases, are included. Statistics of deaths and their causes are given, and the services of the insane asylums are described. There is given also a statement of insular revenue appropriations.

WAR NOTES.

MEDICAL PROMOTIONS AND APPOINTMENTS.—Dr. Harold Johnson, of Lynn, has been commissioned captain in the Medical Officers' Reserve Corps. Preparatory to going to France, he will be assigned either to the Rockefeller Institute or the Bellevue Hospital in New York for training in the latest methods of European war surgery. Dr. Johnson is a graduate of Exeter Academy, Williams College, and Harvard. He was formerly assistant professor of surgery and surgical pathology in the University of California. In 1898, while a student at Harvard, he was commissioned assistant surgeon in the Navy and served in the expedition to Cuba.

Other appointments in the Officers' Reserve Corps and the National Army have been made in the Medical Reserve: first lieutenants, Dr. W. J. Ashland, Boston, and Dr. T. D. Brown, Roxbury.

BRITISH SURGEONS COMING TO U. S. FOR CONFERENCES.—Sir William Arbuthnot Lane, consulting surgeon to Guy's Hospital, Sir James Mackenzie, physician to the London Hospital, and Col. Herbert A. Bruce, consulting surgeon of the British Armies in France, will leave for the United States soon to attend American medical conferences.

M. G. H. DOCTORS COMMISSIONED.—The following appointments have been made in the Officers' Reserve Corps and National Army:

First Lieutenants, M.R.C.: L. N. Gay, Massachusetts General Hospital; T. M. Mabon, Massachusetts General Hospital; and F. A. Fead, of Willimansett. Captain, Q.M.C.N.A.: T. J. Cantwell, Boston.

ARMY HEALTH.—The health of the Army in this country in general continued satisfactory during the week ending May 17. The death rate still is relatively low, while pneumonia cases reported for the week were only 345, compared with 504 the week before. The total deaths for the week were 77, as against 162 the week before. An excellent health record was made in the divisional camps, including the National Guard. Only thirty-seven cases of pneumonia were reported. The National Army camps compare unfavorably, epidemic diseases being more generally prevalent.

CARE OF WOUNDED AT BOSTON CITY HOSPITAL.—The Boston City Hospital can definitely offer fifty beds for care and treatment of soldiers and sailors returning to this city. No more accommodations are immediately available, if the present work for the civilian population is to be continued. If the Government would furnish tentage, however, the hospital could provide tent wards for one hundred and twenty-five additional patients, and might be able to accommodate between three and four hundred more, if corridors and verandas were used.

U. S. LIVERPOOL HOSPITAL.—The first hospital for American soldiers in Great Britain has just been opened in Liverpool. The hospital is known as American Red Cross Military Hospital No. 4, and is situated in the Mossley Hill district, about three miles from the downtown business part of the city. Already many American soldiers occupy its cheerful wards, and many others, in the convalescent stage, are walking about the spacious grounds.

The hospital proper occupies Mossley House, the former home of Dr. Edmund Knowles Muspratt. It is a typical old Gothic style English town house, and is situated on the highest elevation in the city. The head of the hospital is Major Udo J. Wile, Medical Officers' Reserve Corps, United States Army. He has been assisted by Joseph R. Morris of Chicago, representing the American Red Cross. The major's staff consists of five officers—three

captains and two lieutenants. There are ten American Red Cross nurses, twelve sergeants, and twenty privates.

Thirty-four days after Mossley House was taken over, it was a fully equipped American hospital ready for its first patients. It has 150 beds, with room for expansion to 826 beds. The institution is equipped throughout on the American plan. This is especially true of the plumbing and electrical installations, all of which work was facilitated largely through the efforts of the British Royal Engineers. The hospital now has ten wards for soldiers, two small officers' wards, and an operating room, besides the administrative offices. It has, also, two ambulances of the latest type. About two hundred yards from the hospital are being built two isolation wards, each designed to accommodate one hundred contagious disease patients.

BOSTON AND MASSACHUSETTS.

WEEK'S DEATH RATE IN BOSTON.—During the week ending May 25, 1918, the number of deaths reported was 215, against 213 last year, with a rate of 14.29, against 14.31 last year. There were 30 deaths under one year of age, against 25 last year.

The number of cases of principal reportable diseases were: diphtheria, 65; scarlet fever, 32; measles, 315; whooping cough, 59; typhoid fever, 5; tuberculosis, 71.

Included in the above were the following cases of non-residents: diphtheria, 19; scarlet fever, 4; measles, 4; whooping cough, 1; tuberculosis, 2.

Total deaths from these diseases were: diphtheria, 4; measles, 4; whooping cough, 2; typhoid fever, 1; tuberculosis, 21.

Included in the above were the following non-residents: diphtheria, 1; tuberculosis, 1.

MONSON STATE HOSPITAL.—The annual report of the Monson State Hospital has been submitted for the year 1917. The average number of patients treated has been 1031. In spite of the increased cost of all food products, the appropriation has not been exceeded; special appropriations are mentioned in the report. The training school has been affiliated with Bellevue Hospital. The hospital suffers from a lack of helpers; several members of the medical staff have left either to join the service or to enter private practice. Laboratory work has been curtailed because of the departure of the doctor in charge of it. The report contains, also, the treasurer's report and general information concerning admission and location. Statistical tables give detailed information about the hospital and patients.

MASSACHUSETTS COMMISSION FOR THE BLIND.—The eleventh annual report of the Massachusetts Commission for the Blind has been submitted for the year 1917. The number of individuals registered during the year has amounted to 2007; special service has been rendered to 1046 These people have been assisted by the commission in various ways:—training has been given and expenses provided; regular employment for some and temporary work for others has been secured; home industry has been fostered by loans, equipment, use of canvassers and salesrooms; shop industry has been provided; information and advice about medical care, special education, occupations, and relief, have been given; many persons have been reported to other agencies; recreations, concerts, outings, and vacations have been provided. The report contains detailed information and statistics about sight-saving classes, employment in subsidized shops, financial and industrial matters.

INSTRUCTION FOR WAR CRIPPLES IN MASSACHUSETTS.—Massachusetts is proceeding to enact legislation to provide for training and instruction of her disabled soldiers and sailors without waiting for Congress to decide how to handle the national problem. Congress has not yet decided whether the Federal Government will handle all the work itself at its own expense, whether it will coöperate wholly or in part with the states, or whether it will authorize states so qualified to rehabilitate their own men and reimburse the states for the expense involved.

A bill now on its way through the Legislature would direct the State Board of Education to establish a division for the training and instruction of soldiers and sailors who are residents of the State at the time of their discharge. The division would consist of an executive head, appointed by the Board of Education, and an advisory board. The advisory board would consist of the commissioner of education, as chairman, the surgeon-general,

the state health commissioner, the director of the bureau of statistics, the director of mental diseases, the chairman of the industrial accident board, the supervisor of administration, and nine others to be appointed by the Governor. An appropriation of $10,000 is provided to carry out the provisions of the bill for this year.

Another bill before the Legislature would authorize the Industrial Accident Board to establish a division for the training and instruction of persons crippled in industry, provided at the time of their incapacity they were residents of the state. The division would obtain for such persons instruction and employment, and would coöperate with the Federal Government and State Board of Education in establishing or maintaining courses of instruction in schools and institutions for disabled persons. A means of coöperation between this division and that for soldiers and sailors is thus provided.

Mr. Frank J. Donahue, of the Industrial Accident Board, said, in discussing the problem, that the first requirement is to restore the person injured to mental as well as physical health. In selecting employment, it is a case of selecting the right employment for about 90%, and of reëducating the others. Out of the 600,000 positions available in manufacturing industries in Massachusetts in normal times, Mr. Donahue has estimated that about 50,000 could be filled by persons disabled in some manner.

APPOINTMENT OF DR. BRYANT.—Dr. Frederick Bryant of Worcester, Mass., received two appointments last month: one as roentgenologist to the Lynn Hospital, Lynn, Mass.; and another as consultant roentgenologist to the Milford Hospital at Milford, Mass. Dr. Bryant was graduated from the Harvard Medical School in 1900.

NEW ENGLAND NOTE.

AROOSTOOK HOSPITAL SITE.—The site for the Aroostook County Antituberculosis Hospital, Presque Isle, Maine, has been accepted. Construction, for which $20,000 is available, will begin this year.

Miscellany.

PROGRAM FOR "THE CHILDREN'S YEAR" IN NEW YORK CITY

APRIL 6, 1918, TO APRIL 6, 1919.

THE Children's Year has been inaugurated by the Federal Children's Bureau and the Women's Committee of the Council of National Defense, in order to conserve the lives and health of the children of the United States as a measure of national defense.

Through the loss of so many thousands of young men as a result of the war, the countries of Europe have found that the protection of the lives of babies and children is a patriotic duty. Moreover, because of the increase in the number of women in industry, the mounting cost of food and other necessaries of life, and the other social and economic changes brought about by the war, most of the European countries have suffered an increase in the baby death rate and a deprivation of the health of the children. Finally, it must not be forgotten that in all the countries there has been a marked decline in the birth rate.

In this country the war has already shown similar results; thus in New York City the birth rate is much lower than it was last year, the baby death rate is higher and the increased proportion of children of pre-school and school age have been found to be suffering from undernourishment.

In the United States, according to the census of 1910, 300,000 children under the age of five years die annually. The Children's Bureau believes that at least 100,000 of these lives can be saved this year if the women of this country will consider this saving their contribution toward national defense. The number of lives to be saved has been apportioned among the various States. New York City's quota is 4700. The Mayor's Committee of Women on National Defense, Mrs. William Randolph Hearst, Chairman, has been designated by the State Council of Defense, as the official body to organize the campaign to save the lives of these 4700 children under five years of age in New York City this year.

The Committee on Health of the Mayor's Committee will be in immediate charge of the campaign. If New York City is to do its proper share in this important patriotic service, the

aid of all organizations directly or indirectly concerned in child welfare is a vital necessity. Physicians, nurses, social workers, volunteer workers, and all organizations and agencies, including schools, settlements, neighborhood associations, day nurseries, baby health stations, health authorities, publicity and war service organizations must coöperate to the fullest extent.

The Chairman of the Committee on Health of the Mayor's Committee submits the following program for the organization and work of the Children's Year. It is tentative, and subject to suggestions and criticism and to any changes that will make it more effective.

OBJECT.

To save the lives of 4700 children under five years of age in New York City during the year beginning April 6, 1918.

PLAN.

1. *Prenatal Care.* To give every expectant mother the needed care and instruction to maintain her own health and the health of her baby. Forty per cent. of all babies that die under one year of age lose their lives from causes dependent upon the health of the mother before the birth of the child.

This can be done by:

(*a*) Maternity centers.
(*b*) Prenatal instruction by doctors, nurses, and the use of pamphlets.
(*c*) Maternity insurance.
(*d*) Proper care at childbirth.
(*e*) Aid in maintaining healthful living conditions.

INFANT CARE.

2. *Infant Care.* To provide every mother with the care and instruction that will keep her baby well.

This can be done by:

(*a*) Instruction centers in baby health stations, settlements, day nurseries, neighborhood associations, and other agencies.
(*b*) Home visiting by nurses and trained volunteer workers.
(*c*) Provision of milk for infant feeding at a reasonable price.
(*d*) Adjustment of home and living conditions.

3. *Pre-school Age.* To weigh, measure and examine every child of pre-school age (two to six years) and to provide the needed follow-up work to prevent illness and to correct physical defects.

This can be done by:

(*a*) Establishing centers for pre-school age children in dispensaries, schools, baby health stations, settlements, day nurseries, neighborhood associations and other organizations.
(*b*) Obtaining physicians to examine the children.
(*c*) Providing nurses and volunteer home workers to follow up these children in their homes and assure the necessary care.
(*d*) Adjustment of home and living conditions.

VOCATIONAL REHABILITATION OF WAR CRIPPLES.

On April 8, 1918, Senator Hoke Smith, of Georgia, introduced into the United States Senate the following measure providing for the vocational rehabilitation of disabled soldiers and sailors. Previous comment on this important subject has been made in the editorial columns of the Journal. The bill (S. 4284), which has been referred to the Committee on Education and Labor, includes in its scope only men disabled in military or naval service, and not industrial cripples. Its text is, in part, as follows:

Section 1 constitutes the preamble and title of the bill.

Section 2. That every person who is disabled under circumstances entitling him, after discharge from the military or naval forces of the United States, to compensation under Article III of the Act entitled "An Act to authorize the establishment of a Bureau of War Risk Insurance in the Treasury Department," approved September 2, 1914, as amended, and who, in the opinion of the Federal Board for Vocational Education, is unable to resume the former occupation or to enter upon some other suitable or gainful occupation, or having resumed or entered upon such occupation is unable to continue the same successfully and may be vocationally rehabilitated, shall be ordered by the Bureau of War Risk Insurance to follow such course of vocational rehabilitation as the Federal Board for Vocational Education shall prescribe and provide, or when deemed

advisable by said board shall be retained in the military or naval forces of the United States and be detailed to the control and direction of said board until the course of training prescribed has been satisfactorily completed.

The Bureau of War Risk Insurance shall have power, and it shall be its duty, to order the persons included in this section to follow suitable courses of vocational rehabilitation to be prescribed and provided by the Federal Board for Vocational Education, and every person so ordered to follow a course of vocational rehabilitation shall, while following the same, receive monthly compensation in a sum equal to the amount of his monthly pay for the last month of his active service, or to the amount to which he would be entitled under Article III of the said Act approved September 2, 1914, as amended, whichever amount is the greater, and if such person was an enlisted man at the time of his discharge he shall, for the period during which he is so ordered to follow a course of vocational rehabilitation, be subject to all the requirements and entitled to all the benefits of Article II of the said Act approved September 2, 1914, as amended, in the same manner as if he were an enlisted man, and for the purposes of the said Article II his monthly compensation shall be deemed to be his monthly pay: *Provided*, That if and while a person willfully fails to follow the prescribed course of vocational rehabilitation in a manner satisfactory to the Federal Board for Vocational Education the said board shall certify to that effect to the Bureau of War Risk Insurance and the said bureau may, in its discretion, withhold any part or all of the monthly compensation due such person and not subject to compulsory allotment.

The military and naval family allowance appropriation provided for in Section 18 of the the said Act approved September 2, 1914, as amended, shall be available for the payment of the family allowances provided by this section; and the military and naval compensation appropriation provided for in Section 19 of the said Act approved September 2, 1914, as amended, shall be available for the payment of the monthly compensation herein provided.

Section 3 provides that, so far as practicable, the rehabilitation courses shall be made available without cost for instruction.

Section 4 provides that the Federal Board for Vocational Education shall provide the necessary facilities, prescribe courses to be followed, and undertake the placement of rehabilitated men in suitable or gainful occupations.

Section 5 provides that all medical, surgical, or other treatment necessary to give functional and mental restoration to disabled men prior to their discharge from the Army and Navy, shall be under the War and Navy Department.

Section 6. That the Federal Board for Vocational Education is hereby authorized and empowered to receive such gifts and donations from either public or private sources as may be offered unconditionally. All moneys received as gifts or donations shall be paid into the Treasury of the United States and shall constitute a permanent appropriation to be called the "Special fund for vocational rehabilitation," to be used under the direction of the said board, in connection with the appropriations hereby made or hereafter to be made, to defray the expenses of providing and maintaining courses of vocational rehabilitation; and a full report of all gifts and donations offered and accepted and all disbursements therefrom shall be submitted annually to Congress.

Section 7. That there is hereby appropriated, out of any money in the Treasury of the United States not otherwise appropriated, to be used by the Federal Board for Vocational Education for erecting, renting, and remodeling buildings and quarters, repairing, maintaining, and equipping same, and for equipment and other facilities necessary for proper instruction of disabled persons, $250,000; for the preparation of instructors and salaries of instructors, supervisors, and other experts, including necessary traveling expenses, $545,000; for traveling expenses of disabled persons in connection with training and for lodging, subsistence, and other necessary expenses in special cases of persons following prescribed courses, $250,000; for tuition for persons pursuing courses in existing institutions, public or private, $545,000; for the placement and supervision after placement of vocationally rehabilitated persons, $45,000; for studies, investigations, reports, and preparation of special courses of instruction, $55,000; for miscellaneous contingencies, including special mechanical appliances necessary in special cases for disabled men, $110,000; for the administrative expenses of said board incident to performing the duties imposed by this Act, including salaries of such assistants, experts, clerks, and other employees in the District of Columbia or elsewhere, as the board may deem necessary, actual traveling and other necessary expenses incurred by the members of the board and by its employees under its orders, including attendance at meetings of educational associations and other organizations, rent and equipment of offices in the District of Columbia and elsewhere, purchase of books of reference, law books, and periodicals, stationery, typewriters and exchange thereof, miscellaneous supplies, postage on foreign mail, printing and binding to be done at the Government Printing Office, and all other necessary expenses, $200,000: *Provided*, That the said board shall file with the Clerk of the House and the Secretary of the Senate on July first and every three months thereafter, for the information of the

Congress, an itemized account of all expenditures made under this Act.

Section 8. That Section 304 of the Act entitled "An Act to authorize the establishment of a Bureau of War Risk Insurance in the Treasury Department," approved September 2, 1914, as amended, is hereby repealed.

Several organizations, which were concerned in the original draft of a measure to provide vocational rehabilitation for disabled sailors and soldiers, have suggested the following amendment, which would include within the benefits of the bill men disabled in industry. The text of the proposed amendment is, in part, as follows:

Section 8. That in order to provide for the promotion of the vocational rehabilitation of persons disabled in industry, or otherwise, and their return to civil employment there is hereby appropriated for the use of the States, subject to the provisions of this section, for the purpose of coöperating with them in paying the salaries of teachers, supervisors, and directors for the vocational rehabilitation of such disabled persons, and in training teachers, supervisors, and directors for such vocational rehabilitation for the fiscal year ending June 30, 1919, the sum of $500,000; for the fiscal year ending June 30, 1920, the sum of $750,000; for the fiscal year ending June 30, 1921, and annually thereafter, the sum of $1,000,000. Said sums shall be allotted to the States in the proportion which their urban population bears to the total urban population in the United States, not including outlying possessions, according to the last preceding United States Census; *Provided*, That the allotment of funds to any State shall not be less than a minimum of $5000 for any fiscal year, and there is hereby appropriated the following sums, or so much thereof as may be needed, which shall be used for the purpose of providing the minimum allotment to the States provided for in this Section, for the fiscal year ending June 30, 1919, the sum of $66,000; for the fiscal year ending June 30, 1920, the sum of $46,000, for the fiscal year ending June 30, 1921, and annually thereafter, the sum of $34,000.

Section 9. That in order to secure the benefits of the appropriations provided by this Section, any State shall, through the legislative authority thereof: (1) accept the provisions of this Section; (2) designate or create a State board having all necessary power to coöperate as herein provided with the Federal Board for Vocational Education in the administration of the provisions of this Section; (3) appoint as custodian for said appropriations its State Treasurer, who shall receive and provide for the proper custody and disbursement of all money paid to the State from said appropriations.

All moneys expended upon the provisions of this Section shall be upon the condition: (1) that for each dollar of Federal money expended the State shall expend an equal amount for the same purpose; (2) that the State Board shall annually submit to the Federal Board for approval plans showing the manner in which it is proposed that the appropriation shall be used, and shall make an annual report to the Federal Board on or before September 1 of each year on the work done in the State and on the receipts and expenditures of money under the provisions of this Section; (3) that no portion of any moneys appropriated by this Section for the benefit of the States shall be applied, directly or indirectly, to the purchase, preservation, erection, or repair of any building or buildings or equipment, or for the purchase or rental of lands, or for the support of any religious or privately owned or conducted school or college; (4) that all courses for vocational rehabilitation and all training of teachers, directors, and supervisors shall be given in schools or classes under public supervision or control.

Section 10 provides that the Federal Board for Vocational Education shall have power to coöperate with State Boards in carrying out the purposes and provisions of the Act.

Section 11. The Secretary of the Treasury, upon the certification of the Federal Board as provided in this Section, shall pay quarterly to the custodian of each State appointed as herein provided the moneys to which it is entitled under the provisions of this Section. The money so received by the custodian for any State shall be paid out on the requisition of the State Board as reimbursement for expenditures already incurred in such schools and classes as are approved by said State Board and are entitled to receive moneys under the provisions of this Section. The Federal Board for Vocational Education shall make an annual report to the Congress on or before December 1 on the administration of this Section, and shall include in such report the reports made by the State Boards on the administration of this Section by each State and the expenditure of the money allotted to each State.

Section 12. To be "Section 8" of the bill as introduced.

Hearings on the bill and its amendment were held in Washington on April 10 and May 1. The bill has been simultaneously introduced into the House of Representatives by the Hon. William J. Sears, to whom, or to Senator Smith, comments should be addressed.

INFECTIOUS JAUNDICE IN THE UNITED STATES.

PUBLIC HEALTH REPORT No. 19, Vol. 33, for May, 1918, discusses the problem of acute in-

fectious jaundice in the United States. In presenting this paper, the writer desires to:

1. Emphasize the aspects of the disease which are of special interest to sanitarians in the United States.

2. Briefly outline the epidemiological problems of the disease.

3. Indicate the procedures for their study by laboratory methods.

In mentioning the prevalence of the disease among the troops in Europe, the author says:

"It is well known that outbreaks of jaundice have occurred at different times among the French, British, Italian, German, and Russian troops. The geographical range of prevalence has been from Belgium to Gallipoli. In most of the outbreaks the mortality has been low, but in some of the commands the attack rate has been high. At this time the weight of evidence indicates that the disease in the great majority, if not in all, instances, has been due to the *Spirochaeta icterohemorrhagiae* of Inada (1916) and his coworkers."

Spirochaeta icterohaemorrhagiae are prevalent also among the wild rats in the United States.

"Noguchi (1917) found that rats captured about New York City were infested with a spirochaeta identical in appearance with that causing acute spirochaetal jaundice in man. This worker, by means of cross immunity tests, presented further evidence that the parasites causing the human disease in Europe and Japan and those found in New York rats were the same. Jobling (1917) found that of more than a hundred rats captured in Nashville, Tenn., at least ten per cent. carried similar spirochætes in their kidneys. The writer has found a similar prevalence of the *Spirochaeta icterohaemorrhagiae* in wild rats captured in Washington, D. C. As far as can be made out, the organisms found by different workers in the United States correspond very closely in appearance and pathogenicity for guinea pigs with those infecting human beings in the trenches in Europe and in the mines of Japan. The evidence, then, seems to indicate pretty conclusively that the *Spirochaeta icterohaemorrhagiae*, the cause of acute spirochaetal jaundice in man, is rather widely disseminated among wild rats living under such different conditions of environment as obtain in New York, Washington, and Nashville. Reports of the degree of prevalence of these parasites in the rats throughout the country are awaited with considerable interest.

A search of the literature reveals a number of reports of outbreaks of jaundice among the civil population in the United States. In the majority of these reports no special prevalence of other febrile diseases is mentioned in connection with the cases reported. In many of the cases the observers were impressed with the fact that they were dealing with a condition they had never seen before, basing their diagnosis on the description of the disease as it occurs in Europe.

Whatever may be the weight attached to such facts as have been stated above, they indicate that epidemics of jaundice closely simulating those now known to be caused by the *Spirochaeta icterohaemorrhagiae* have occasionally appeared in this country, and that they were possibly due to this parasite. This latter statement is strengthened by the finding by A. M. Stimson (personal communication) of spirochaetes in sections of the kidney of a man who died in New Orleans of a disease characterized by jaundice and fever. These sections, prepared by Levaditi's method, show spirochaetes morphologically similar to the causative agent of acute spirochaetal jaundice."

The problem of the rat as a carrier of the *Spirochaeta icterohaemorrhagiae* is a serious one.

"English and French workers soon demonstrated the presence of the *Spirochaeta icterohaemorrhagiae* in rats taken from the trenches in which the disease had appeared among troops. Thus Stokes (1917) found 6 out of 15 rats to be infected. On the other hand, Courmont and Durand (1917) examined 50 rats taken in a region where acute infectious jaundice was unknown. The rats appeared perfectly healthy, but four of them were proved by guinea-pig inoculation to harbor the *Spirochaeta icterohaemorrhagiae*. These figures approximate the rate of incidence later obtained for wild rats in the United States. Rat infestation has been demonstrated in other portions of France.

While the problem of the rat in relation to acute infectious jaundice has not been completely worked out, the following statement of the mode of transfer forms a reasonable hypothesis. About ten per cent. of all wild rats, wherever located, probably carry the *Spirochaeta icterohaemorrhagiae* in their kidneys

and excrete them in their urine. If this organism finds a favorable environment in the soil, a sufficient number may live long enough to infect a human being who gets them in the mouth or on the skin. Under these conditions a larger number of rats also take up the spirochaetes.

Much more work needs to be done to place the whole matter on a sound scientific basis, and to do this it is essential to: (1) recognize cases of the disease in man, (2) determine the general prevalence of the *Spirochaeta icterohaemorrhagiae* in wild rats, living in various environments."

RÉSUMÉ OF COMMUNICABLE DISEASES IN MASSACHUSETTS FOR APRIL, 1918.

GENERAL PREVALENCE.

THERE were 4752 cases of communicable diseases reported in April, an increase of 1990 cases over the March total, which was 12,762, and 6121 cases more than the April, 1917, total of 8631 cases.

The increase in cases is largely confined to lobar pneumonia, measles, German measles and whooping cough.

Anthrax.—The single case of anthrax reported for the month occurred in a hide handler in a leather factory in Haverhill.

Epidemic Cerebrospinal Meningitis.—There were 67 cases of cerebrospinal meningitis reported from 24 communities in the State. This disease is becoming more prevalent throughout the State, and it is important that each physician have a spinal fluid examination made for each case, in order that his diagnosis may be confirmed by laboratory examination.

Septic Sore Throat.—This disease showed an increase of 6 cases over the preceding month. Nine of the 19 cases occurred in the town of Holliston.

Smallpox.—Two cases of smallpox were reported for April. The first case was in an inmate of the Tewksbury State Infirmary, and the source of infection was a previous case at the Infirmary. The patient was never successfully vaccinated. The second case occurred in a woman who cleaned offices in public buildings. The patient was never successfully vaccinated, and the source of infection was not ascertained.

Typhoid Carrier.—A typhoid carrier was discovered during the month in a maid employed in a private family. The carrier gave a history of having had typhoid fever 20 years ago, and a specimen of feces proved positive. The carrier was responsible for one case of typhoid fever in the family in which she was employed.

Diseases on the Premises of Milk Handlers.—There were 6 cases of scarlet fever and 1 case of diphtheria on milk-producing farms during the month. All of the cases were carefully isolated by the local boards of health, and the infection was not spread to the consumers except in one instance, when the disease was not recognized until two persons employed in the handling of the milk were found to be desquamating.

OUTBREAKS AND EPIDEMICS.

Diphtheria.—In Malden, 22 cases of diphtheria were reported. The cases were mostly scattered throughout the city. During the course of investigation, in one instance 4 cases were discovered in one family by contact culturing, and in another instance, 5 cases were discovered by culturing the throats of the contacts.

Measles.—There were 174 cases of measles reported from Lawrence. The epidemic started in one of the schools among the pupils of the lower grades, but now the disease is well scattered all over the city.

In Chelmsford, there were 102 cases reported. The outbreak started by a family being exposed to an unrecognized case that was visiting them.

Scarlet Fever.—In Adams, 14 cases of scarlet fever were reported. Five of the cases attended the Notre Dame School, and 3 cases were also reported from one family.

A distinct outbreak of 97 cases of scarlet fever occurred in Holliston. Investigation established the fact that the cases were not of school age and that they were mostly on the route of one milk dealer. The premises of this milk dealer were visited, and two persons who handled the milk were found to be desquamating. These cases were immediately isolated, all the milk was pasteurized and all utensils used in handling the milk were sterilized. Following this action, the number of cases immediately began to decrease. In less than one week the outbreak was checked, and no more cases were reported.

RARE DISEASES.

Anterior Poliomyelitis was reported from Boston, 1; Cambridge, 1; Lowell, 1; Medford, 1; Methuen, 1; and Springfield, 1.

Anthrax was reported from Haverhill, 1.

Dog-bite was reported from Charlton, 1; and Lowell, 2.

Epidemic Cerebrospinal Meningitis was reported from Boston, 21; Cambridge, 7; Camp Devens, 3; Chelmsford, 1; Chelsea, 2; Concord, 1; Fall River, 2; Holyoke, 1; Lawrence, 2; Leominster, 1; Lowell, 3; Malden, 1; Mansfield, 1; Milton, 1; New Bedford, 1; Northbridge, 1; Pittsfield, 2; Revere, 2; South Hadley, 1; Sutton, 1; Waltham, 1; Weymouth, 1; Winthrop, 1; and Worcester, 9.

Malaria was reported from Boston, 1; Dedham, 2; Lynn, 1; and Newton, 1.

Pellagra was reported from Cambridge, 1; and Northampton, 1.

Septic Sore Throat was reported from Boston, 2; Fall River, 1; Haverhill, 1; Holliston, 9; Lenox, 1; Leominster, 2; Lowell, 1; Melrose, 1; and Watertown, 1.

Smallpox was reported from Chelsea, 1; and Tewksbury State Infirmary, 1.

Tetanus was reported from Concord, 1.

Trachoma was reported from Boston, 7; Cambridge, 1; Lowell, 1; and Plymouth, 1.

AMERICAN CLIMATOLOGICAL AND CLINICAL ASSOCIATION PROGRAM.

SESSIONS will be held in the Boston Medical Library.

Wednesday, June 5, 10 a.m.

"The Larger Controls of the Climates of the United States." Prof. R. DeCourcy Ward, Harvard University.

"Experimental Vegetative Endocarditis," Dr. Cleaveland Floyd, Boston.

"The Foramen Ovale in Connection with Certain Cardiac Murmurs." Dr. W. F. R. Phillips, Charleston, S. C.

Nearly all text-books on cardiac disease speak of the foramen ovale as being patent only in fetal and early infant life. Few, if any, refer to it as a probable cause of some of the murmurs without other evidences of cardiac disease; but anatomists have called attention all along to the fact that the foramen is frequently patent through life.

"Fatigue," Dr. Thomas Darlington, New York.

"Rhythmical Breathing." Dr. I. H. Hance, Lakewood, N. J.

Rhythmical breathing implies that there exists a voluntary control and use of the diaphragm. Continuous muscular movement conserves energy and increases efficiency when performed rhythmically with breathing. Few are instructed in proper breathing, whereas general muscular development is sought by everybody. Breathing exercises influence beneficially the functioning of all organs; concentrate the individual's mind upon the performance of the act and facilitate his powers of concentration; produce general muscular relaxation, relieving thereby nerve tension. Detailed description of method. Few remarks of its effect on the spasms of asthma.

Wednesday Afternoon, June 5.

"Anti-Typhoid Inoculations in the Canadian Forces." Captain George D. Porter, A.M.C., Toronto, Canada.

Importance of inoculation now recognized by the authorities, who make it compulsory. Practical immunity from this disease at home and at the front since inoculation has been made compulsory. Both typhoid and para-typhoid inoculations used. Technic employed, with dose and frequency. Immediate results very good; little inconvenience and but very few severe reactions.

"Five Years' Experience with Artificial Pneumothorax." Capt. C. D. Parfitt, A.M.C., Gravenhurst, Canada.

"A Study of Fifty Cases of Tuberculosis, Mostly of the Glands and Joints, Treated with Tuberculin, Compared with an Equal Number Treated Without It." Dr. Richard Cole Newton, Montclair, N. J., and Dr. Sidney A. Twinch, of Newark, N. J. (by invitation).

(1) A comparison of the course and behaviour of the disease in the two classes of patients.

(2) Duration and results of the two forms of treatment so far as ascertainable.

(3) What conclusions, if any, are fairly deducible from the data presented?

"Granular Tuberculous Conjunctivitis Treated by Instillations of Tuberculin." Dr. R. C. Paterson, Saranac Lake, N. Y.

Case report. Discussion of the action of tuberculin in causing focal reactions; the

beneficial effect of these reactions exemplified by the case reported.

"Comparative Results Obtained in the Treatment of Pulmonary Tuberculosis by (1) Graduated Labor, (2) Bed Rest Treatment, (3) Rest and Exercise Treatment." Dr. H. M. Kinghorn, Saranac Lake, N. Y.

Thursday Morning, June 6.

President's Address.

"Late Results of Gunshot Wounds of the Chest." Capt. J. H. Elliott, A.M.C., Toronto, Canada.

"Cardiac Conditions That Disqualify for Army Service." Dr. Collins H. Johnston, Grand Rapids, Mich.

Discussion by Dr. A. K. Stone, Boston.

"The Soldier and Tuberculosis," Dr. Edward O. Otis.

"What Shall be Done with Tuberculous Soldiers?" Dr. Jay Perkins, Providence, R. I.

(*a*) Discovered in draft, (*b*) in the cantonments, (*c*) overseas.

Discussion by Dr. A. K. Stone.

"Literature on the Climatology of the United States." Prof. R. DeCourcy Ward, Harvard University.

(To be read by title.)

Paper by Dr. F. M. Pottenger, Monrovia, Calif.

MEMORIAL NOTICES.

Fleming Mant Sandwith, C.M.G., M.D., F.R.C.P

Boardman Reed, M.D.

Samuel G. Dixon, M.D., LL.D., Sc.D.

Thomas J. Mays, M.D.

Herbert Maxon King, M.D.

Norman Hay Forbes, F.R.C.S.

E. Fletcher Ingals, M.D.

Correspondence.

STANDARDIZATION OF MEDICAL PUBLICATIONS.

Madison, Wisconsin, May 23, 1918.

Mr. Editor:—

Publishers of medical literature would be wise to imitate, in part, the methods of the commercial houses which vie with each other in getting out attractive preparations and convenient packages for their goods. In selling medical literature to "the trade," which in this case is made up of physicians and surgeons all over the country, it needs no stretching of the imagination to see that a convenient and attractive form would be an equally important asset. Nothing could be a greater inducement toward the collecting of medical literature by subjects and the preserving of them in uniform bindings than the standardizing of all medical publications both as to size and type.

In these days of rush and hurry and with the prospect of actual shortage of physicians which the continuation of the war will almost surely bring about, it will be increasingly difficult, if not impossible, for physicians to leave their practice for post-graduate study. And yet, never in the history of medicine has the need for such study been greater. Every physician needs today to increase his efficiency to the highest point. Medical progress will not only not halt until the close of the war, but will double its pace. How is the ordinary overworked physician to keep up with it? Clearly, the easiest and most accessible method will be in reading the current medical magazines and keeping special articles for reference. And it is here that the publishers can furnish valuable help to their readers. The filing of reprints would become a matter of pride if they came in uniform sizes and could be bound by subject instead of being thrown loosely into filing cabinets and cross referenced. Every year would see the addition to a man's library of several neat volumes representing all the best work in the different lines of medical practice accomplished during the year. A man could then review a subject with ease and it would be of immensely greater profit to him to take up the volume and study it carefully than is the method of today of skipping through the journals each month and trying to cull a little bit of knowledge on a lot of different subjects. The way to learn is to get saturated with a subject and stay with it for a few weeks. The superficial hit and miss type of perusal of medical literature too easily becomes like the daily paper habit. A man forgets how to study and prostitutes his own memory and intelligence.

It ought also to be possible for the different publishing houses to coöperate in the collection of literature and bind together literature on related subjects and offer them at special rates to subscribers and non-subscribers. This would seem highly feasible, since there would be a complete saving of additional typesetting. An "interallied" council of editors could agree on the contents of each volume and, perhaps, add some useful and valuable editorial matter.

H. P. GREELEY.

[NOTE.—The JOURNAL adopted, in 1915, the standard library size of reprints. Standardization of type is less easy to secure than of size, owing to local differences of taste, style and convenience. It is also less important, though obviously desirable.—*Editor.*]

A CORRECTION.

Boston, May 21, 1918.

Mr. Editor:—

The Boston X-ray Laboratories have recently circulated among the medical profession of Boston an announcement containing a statement regarding their personnel which seems to me to be misleading.

They state that Dr. M. N. Tennis, who is in charge of the work for them, was assistant to Dr. Dodd at the Massachusetts General Hospital for eight years. Also, that Mr. Lunan, one of their staff, was also assistant to Dr. Dodd and myself at this hospital for four years.

The term "assistant" would imply that they acted as assistant roentgenologists and did work which can be done only by trained physicians. As a matter of fact, both of these men while here did purely technical work. They had nothing whatever to do with the diagnosis or interpretation of the x-ray findings.

Therefore, if seems only fair to the medical profession and to the Massachusetts General Hospital to correct the statement regarding their work in this institution.

Very truly yours,

GEORGE W. HOLMES.

RECENT DEATHS.

BENJAMIN DODDS GIFFORD, M.D., died at Chatham, May 16, 1918, aged 72 years.

CHARLES REED WHITCOMB, M.D., died at Roslindale, March 9, 1918, aged 64 years.

SEABURY WARREN BOWEN, M.D., a retired Fellow of the Massachusetts Medical Society, died at his home in Fall River, March 2, 1918, at the age of 77

HENRY EDWARD GODDARD, M.D., died at the Goddard Hospital, Brockton, of pneumonia, May 12, 1918. Dr. Goddard was born in Brockton May 20, 1852, the son of Rev. Warren Goddard. He graduated, A.B., from Brown in 1875, and from the U. C. Theological Seminary the following year, becoming pastor of the society of the New Jerusalem Church in Brockton and filling the position until 1894. Then he turned his attention to medicine and graduated at the Dartmouth Medical School in 1897, settling in his native city, joining the Massachusetts Medical Society in 1898, and soon founding, in 1902, the Goddard Hospital, a private surgical and obstetrical institution. He is survived by three children, one of them being Dr. Samuel W. Goddard of Brockton.

STEPHEN WILLIAM DRIVER, M.D., died at his home in Cambridge, May 21, 1918, aged 85 years.

Dr. Driver was born in Sharon, April 17, 1833. He was the son of Rev. Joseph M. Driver, a Baptist clergyman, whose family came from Salem. He prepared for college at Phillips Andover, and, entering Harvard, was graduated in the class of '60, of which he was the secretary for more than twenty years, a period of service that was fittingly recognized by his classmates on the fiftieth anniversary of their graduation, when Dr. Driver was presented with a silver bowl and a purse of money.

Following his graduation, he entered the Harvard Medical School, graduating in 1863 after his return from the war. He enlisted for Civil War service and was stationed for a year at Ship Island, in the Gulf of Mexico, as a surgeon.

Dr. Driver then returned North and began his practice, occupying his Brattle street residence, which was built in 1737, and in which, with its surrounding garden, the doctor took great delight. He had been president of the Middlesex South District Medical Society and of the Cambridge Society for Medical Improvement. He was a member of the American Medical Association and of the Massachusetts Medical Society, and was upon the original staff of the Cambridge Hospital, serving for many years.

Dr. Driver's wife, who died three years ago, was Martha Hamilton Fitz Clarence of Cambridge, and his only survivor is a daughter, Miss Martha Elizabeth Driver.

SOCIETY NOTICE.

NATIONAL TUBERCULOSIS ASSOCIATION.—Several changes have been made in the program of the fourteenth annual meeting of the National Tuberculosis Association, to be held in Boston, June 6 to 8.

The dinner meeting of the American Sanatorium Association, announced for Thursday, will be omitted. A short business session will be held at 5 P.M., Friday, June 7th.

The program of the Advisory Council meeting on Thursday evening will be as follows: "How America is Helping France with its Tuberculosis Problem," James Alexander Miller, M.D., New York; "How the United States is Meeting the Tuberculosis War Problem," Col. George E. Bushnell, U.S.A.; "How Canada is Meeting the Tuberculosis War Problem," Capt. Jabez H. Elliott, Canadian Military Hospital Commission, Toronto, Canada.

In accordance with Article X of the By-Laws of the National Association for the Study and Prevention of Tuberculosis, all of the various agencies engaged in anti-tuberculosis work throughout the country are invited to attend the annual meeting of the National Association and to participate especially in the meeting of the Advisory Council to be held on the evening of June 6th. There is no fee for membership in the Advisory Council, and organizations may send one or more representatives to represent them at this and other meetings of the National Association.

The program of the Clinical Session will be divided as follows:

Friday morning session: Drs. Rutledge, Philip King Brown, Lloyd, Floyd, Sampson, Hawes and Elliott. Friday afternoon session: Drs. Krause, Bowditch, Kinghorn, Lawrason Brown, Pratt and Landis. Saturday morning session: Drs. Slater, Dworetzky, Mills and D. MacDougall King. The subject of the paper by Dr. Joseph H. Pratt will be "Tuberculosis as an Army Problem," and Dr. Lawrason Brown will collaborate in this paper. Dr. Bowditch has changed the title of his paper to "Methuselah and Life in the Open." The title of Dr. Dworetzky's paper has also been changed to "The Institutional Care of Laryngo-Pulmonary Tuberculosis." The title of the paper by Dr. H. R. M. Landis has been changed to "Diabetes Complicated with Tuberculosis, Treated by Means of the Allen Method," and Dr. Elmer H. Funk and Charles M. Montgomery of Philadelphia will collaborate in the paper. The paper by Dr. King is additional to those mentioned in the April bulletin of the Association. His subject will be the "Recording of Physical Findings in Chest Examinations."

Dr. James B. Murphy, Rockefeller Institute for Medical Research, New York, has been added to the list of speakers at the meeting of the Pathological Section on Friday.

Miss Mary S. Gardner, R.N., Director of the Town and Country Nursing Service of the American Red Cross and Superintendent of the Providence District Nursing Association, will preside at the luncheon meeting for public health nurses on Friday. Miss Bernice Billings, R.N., of the Massachusetts State Board of Health, will discuss "Some Tuberculosis Problems of the Rural Public Health Nurse," and Miss Margaret Stack, R.N., Visiting Nurse Association, New Haven, will speak on "Some Tuberculosis Problems of the City Public Health Nurse," after which there will be an open discussion. All nurses interested in this subject are invited to attend. The luncheon will be held at Westminster Hotel, price $1.00 per plate.

In place of the meeting and outing of the National Conference of Tuberculosis Secretaries, scheduled to begin at 12.30 P.M., on Saturday, the secretaries and all others interested will hold a dinner meeting at 6.30 P.M., on Friday, at the Westminster Hotel. Stunts will be provided by Eastern, Western and Southern groups.

The mass meeting, under the auspices of the local committee on arrangements, will begin at 8.15 on Friday evening, instead of at 8.00 o'clock.

The program will be as follows: Address by Hon. Samuel W. McCall, Governor of Massachusetts; "The Work in Tuberculosis of the Department of Health," Eugene R. Kelley, M.D., Commissioner of Health; "The State Sanatoria," Arthur K. Stone, M.D., Chairman of the Trustees of Hospitals for Consumptives; "The Municipal Hospitals of Massachusetts," John F. O'Brien, M.D., Chairman of the Trustees, Boston Consumptives' Hospital; "Tuberculosis Work in the State at Large," Vincent Y. Bowditch, M.D., President, Massachusetts Anti-Tuberculosis League.

The session of the Sociological Section, scheduled for 9.00 A.M., on Saturday, will close at 11.00 o'clock, and a special session on the Framingham Community Demonstration will be added. Three papers will be given at this session, as follows: "The Framingham Health Program: The First Year's Results," Donald B. Armstrong, M.D., Executive Officer; "The Framingham Consultation and Medical Examination Work," P. C. Bartlett, M.D., Chief Medical Examiner; "The Framingham Educational and Organization Activities," Miss Mary A. Abel, Educational Assistant.